SP01247

CCP-310/314

US Model
AEP Model
UK Model
J Model

• CCP-310

• CCP-314

CASSETTE TO CASSETTE PRINTER

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

【修理上の注意】

製品の安全性を確保するために「電気用品取締法」に従って修理する必要があります。

安全・性能維持のため，必ず指定の部品をご使用下さい。

SONY®

SERVICE MANUAL

サービスガイド/補修部品表

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SECTION 1
OPERATION

1-1. SPECIFICATIONS

Power requirements	
	US model: 120 V ac, 60 Hz
	AEP model: 220 V ac, 50/60 Hz
	UK model: 240 V ac, 50 Hz
Power consumption	
	US model: 0.62 A
	AEP model: 55 W
	UK model: 56 W
Recording system	4-track 4-channel
Tape cassette	Normal TYPE I cassette (TYPE II and TYPE IV tapes not usable)
Tape speed	38 cm/s (15 ips)
Copy time	Approx. 4 min. (with 60 min cassette)
Rewind time	Approx. 65 sec. (with 60 min cassette) cassette)
Frequency response	
	50 Hz – 10 kHz
Recording bias frequency	
	Approx. 480 kHz
S/N	Better than 48 dB (NAB-A: WRMS)
Wow and flutter	Less than 0.25% (WRMS)
Crosstalk	Better than 50 dB (between track 2 and 3, at 1 kHz)
Line/control output (CCP-310 and CCP-314)	
	13-pin DIN connector
	Line output
	output level 0 dBm (0 dBm = 0.775 V)
	load impedance more than 40 kΩ
	Control output
External input (CCP-310)	
Line/control input (CCP-314)	
	13-pin DIN connector
	Line input
	input level 0 dBm
	input impedance 40 kΩ
	Control input
Dimensions	Approx. 590 × 111 × 325 mm (w/h/d) ($23^1/_4 \times 4^3/_8 \times 12^7/_8$ inches) including projecting parts and controls
Weight	Approx. 9.5 kg (20 lb 7 oz)

電源	AC 100V、50/60Hz
消費電力	53W
トラック方式	4トラック　4チャンネル
使用カセット	TYPE I（ノーマル）カセット（CrO_2、メタルカセットは使用不可）
テープ速度	38cm/s
コピー時間	約4分(60分用カセットにて)
巻き戻し時間	約65秒(60分用カセットにて)
周波数特性	50Hz～10kHz
録音バイアス周波数	約480kHz
総合S/N	48dB以上（JIS-A最大録音レベル時）
ワウフラッター	0.25%（WRMS）
クロストーク	50dB以上（1kHz）（2～3チャンネル間）
ラインコントロール出力端子（CCP-310/314）（13ピンDINコネクター）ライン出力	
	基準出力レベル0.775V（0dBm）
	負荷インピーダンス40kΩ以上
	動作コントロール出力
入力端子	CCP-310：外部入力端子（13ピンDINコネクター）
	CCP-314：ライン/コントロール入力端子（13ピンDINコネクター）
	ライン入力
	基準入力レベル0.775V（0dBm）
	入力インピーダンス40kΩ以上
	動作コントロール入力
最大外形寸法	590×111×325mm（幅/高さ/奥行き）
重量	約9.5kg

1-2. FEATURES

CCP-310

- High speed cassette duplication onto 3 copy cassettes at 8 times normal speed.
- Side select switch to select one-side duplication or both-side duplication.
- Auto-copy function to activate a series of tape operation automatically at the press of a button.
- Audio end detection to stop duplication automatically at the end of the program recorded on the original tape.
- Short tape indicator to show that duplication may be uncomplete due to a short copy tape and that a check is required.
- Peak level meters and recording level controls for properly balanced duplicates on each track.
- Audio and control output terminal for connecting an additional cassette to cassette printer with copy section only. Up to 10 additional printers can be connected in sequence.
- External input connector for connecting another CCP-310, allowing use of the CCP-310 as either master or additional printer.

CCP-314

- High speed duplication onto 4 copy cassettes at 8 times normal speed.
- Tape operation fully controlled by the connected CCP-310.
- Audio and control output terminal for connecting another CCP-314.

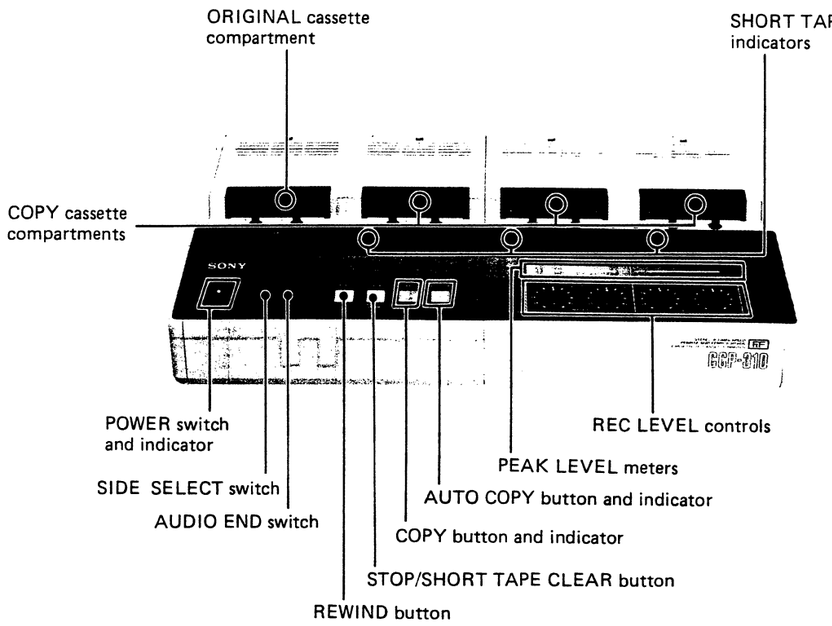
CCP-310

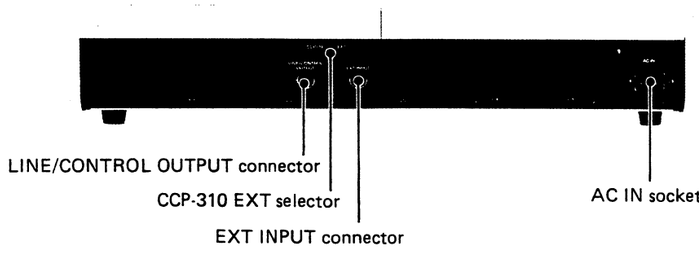
- 同時に3巻のカセットにコピーできる8倍速の高速カセットプリンター。
- 両面同時コピー、片面コピーの切り換えができるSIDE SELECTスイッチつき。
- ボタン1つで、テープの巻き戻し→コピー→巻き戻し→停止の一連の動作が自動的に行えるAUTO COPY機能つき。
- オリジナルテープの音声がなくなると自動的にコピーを終了して、停止または巻き戻しに移るAUDIO END検出機能つき。
- コピー用テープが短いためにコピーが不完全な恐れがあり、チェックをする必要があることを示すSHORT TAPEインジケーターつき。
- トラック別にレベル調節ができるPEAK LEVELメーターとREC LEVEL調節つまみつき。
- コピー専用カセットプリンターCCP-314接続用出力端子つき。必要なコピーカセット数に応じて、CCP-314が10台まで接続可能。
- CCP-310をもう1台接続してコピー専用機として使える外部入力端子つき。

CCP-314

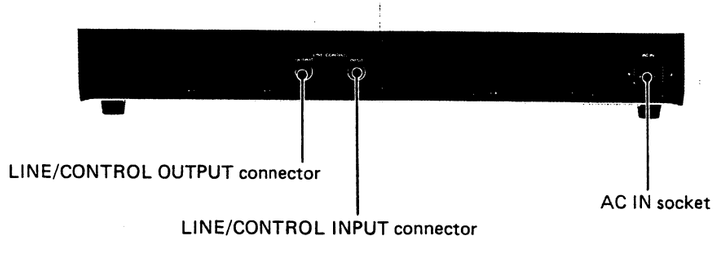
- コピー用カセットが4巻入る、コピー専用8倍速高速プリンター。
- コピー用カセットの動作はすべて、CCP-310のボタン操作およびオリジナルカセットの動作によりコントロールされます。

1-3. EXTERNAL VIEWS





CCP-310



CCP-314

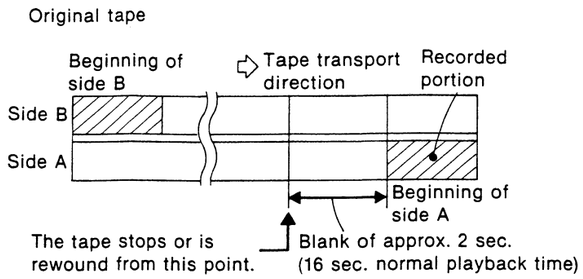
1-4. FUNCTION OF CONTROLS

SIDE SELECT switch
Select one side or both sides of the cassette for one duplication run.
A: For one side duplication. After duplication, the tapes will stop at the end.
A + B: For both side duplication. After duplication, all tapes will be rewound and stop at the beginning. When the SHORT TAPE indicator lights, however, the corresponding copy tape will not be rewound.

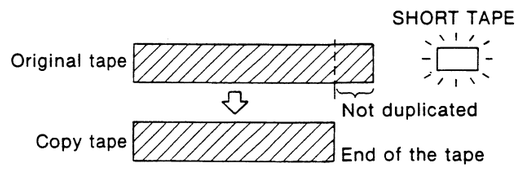
AUTO COPY button and indicator
Press to rewind and then duplicate the tapes. The indicator lights and all tapes are rewound to the beginning. When all the tapes have been rewound, playback of the original tape and recording on the copy tapes start. Recording also starts on the connected printer. When duplication is finished and all the tapes stop, the indicator goes off.

AUDIO END detection
When the AUDIO END switch is set to ON, the audio signals recorded on the original tape are detected during duplication. If there is a blank space of more than two seconds (16 seconds of normal playback time) on the original tape, it is treated as the end of the program, and duplication will stop automatically.
- The audio end detection works for the side being duplicated when the SIDE SELECT switch is set to A, or for both sides when the switch is set to A + B.

Note
The audio end detection may malfunction in the following cases and stop duplication in the middle of the program. In such cases, set the AUDIO END switch to OFF.
—when there is a blank of more than 16 seconds normal playback time or a program of very low volume level continues for the above duration.
—when duplicating both sides of an original tape which is prerecorded only at the beginning of each side.


Original tape
Beginning of side B
Tape transport direction
Recorded portion
Side B
Side A
Beginning of side A
The tape stops or is rewound from this point.
Blank of approx. 2 sec. (16 sec. normal playback time)

SHORT TAPE indicator
The SHORT TAPE indicator lights to show that a copy tape was so short that the duplication may not have been made completely and that a check is required.
When a copy tape reaches the end before the end of the program of the original tape, it stops but the original tape continues running. The corresponding SHORT TAPE indicator will light approximately 2 seconds after the end of the program. The copy tape with its SHORT TAPE indicator lit will not be rewound even if the SIDE SELECT switch is set to the A + B position.



Note
When a copy tape reached the end just a moment after the end of the program of the original tape, the SHORT TAPE indicator may light even if duplication is complete. To confirm duplication, playing back near the end of the copy tape using a cassette recorder is recommended.

SIDE SELECT(コピー面切り換え)スイッチ

片面コピー、両面コピーを切り換えます。接続されているコピー機も自動的に切り換わります。

A ：片面(上側の面)のみコピーするとき。コピーが終わると、それぞれのテープの終わりで自動的に止まります。

A+B ：両面同時にコピーするとき。オリジナルテープの終わり(AUDIO ENDスイッチがONのときはオリジナルテープの音声の終わり)で全部のテープの巻き戻しが始まり、それぞれのテープの頭で自動的に止まります。ただし、SHORT TAPEインジケーターが点灯すると、そのコピー用テープは巻き戻しされません。

AUTO COPY(オートコピー)ボタンとインジケーター

テープを巻き戻してからコピーを始めるとき押します。インジケーターが点灯し、すべてのテープが頭まで巻き戻された後、オリジナルカセットは再生、コピー用カセットは録音状態になります。コピーが終わり、すべてのテープが止まるとインジケーターが消えます。

オーディオ・エンドの検出

AUDIO ENDスイッチをONにすると、コピー中に、オリジナルテープに音声が録音されているかどうかを検出します。約2秒間(通常再生速度にして約16秒間)音声がないと、自動的にコピーを終了します。

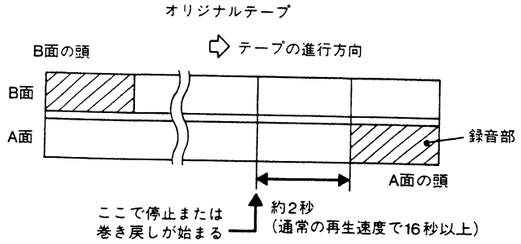
SIDE SELECTスイッチがAのときはコピーしている面の音声を、A+Bのときは両面の音声の有無を検出します。

ご注意

次の場合には、オリジナルテープの途中でもコピーが終了してしまうことがあります。この場合にはAUDIO ENDスイッチをOFFにしてコピーしてください。

－通常の再生速度で約16秒以上、録音が中断しているか、あるいはレベルが非常に低い部分のあるオリジナルテープの場合。

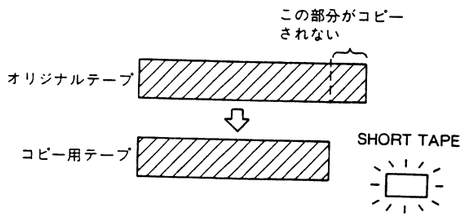
－A面およびB面の初めの部分だけ録音されているオリジナルテープを両面コピーするとき。



SHORT TAPEインジケーター

SHORT TAPEインジケーターは、コピー用テープが短いためにオリジナルテープの内容が完全にコピーされていない恐れがあり、コピーが完全かどうかチェックする必要があることを示します。

コピー中、オリジナルテープにまだ音声が入っているのにコピー用テープが先に終わると、オリジナルテープはそのまま走り続けます。その後、オリジナルテープの音声がなくなってから約2秒後に、SHORT TAPE インジケーターが点灯します。この場合、SIDE SELECTスイッチの位置がA+Bであっても、そのコピー用テープは巻き戻しされず、停止したままになります。

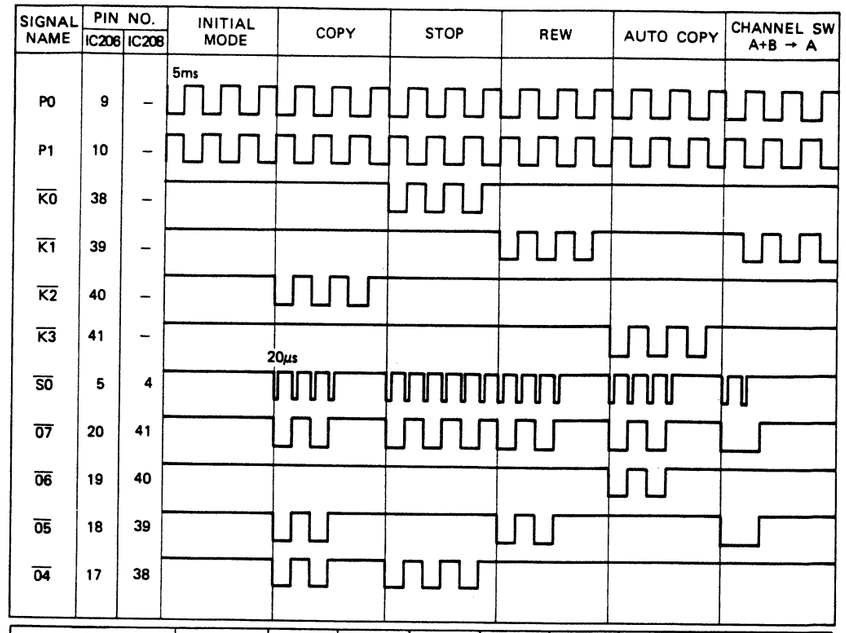


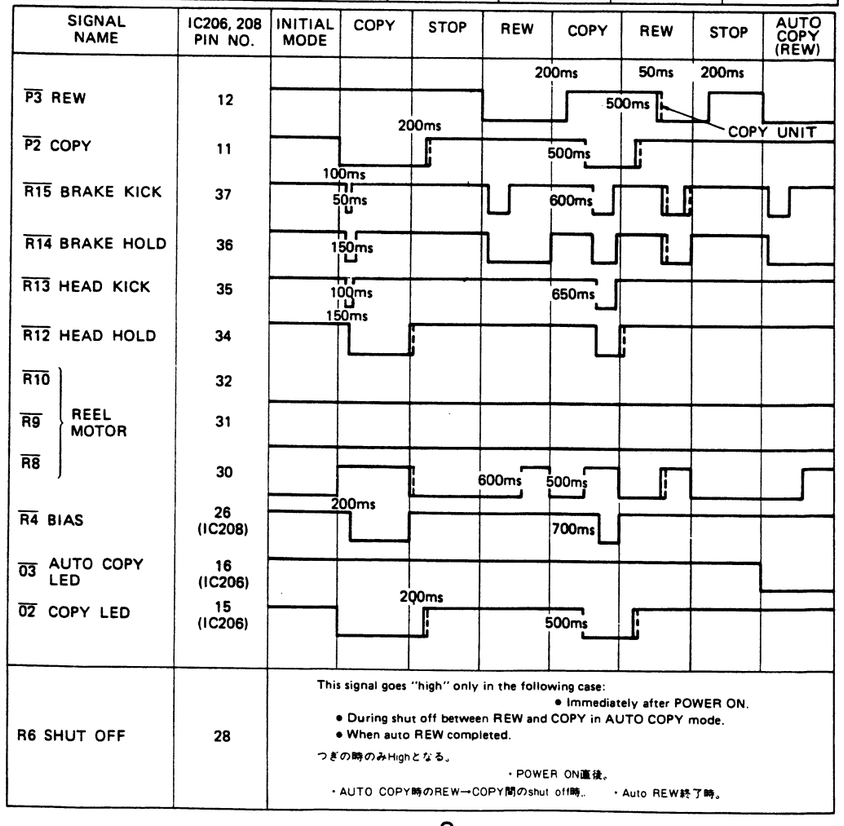
ご注意

オリジナルテープの音声の終わりとコピー用テープの終わりの時間差がごくわずかな場合、最後までコピーされていてもSHORT TAPEインジケーターが点灯することがあります。(同じタイプのテープでも、テープの長さのバラツキにより、このような現象が起こることがあります。)コピー用カセットを取り出し、別のカセットレコーダーなどで最後の部分を再生し、確認してください。

SECTION 2
CIRCUIT DESCRIPTION

2-1. TIMING CHART

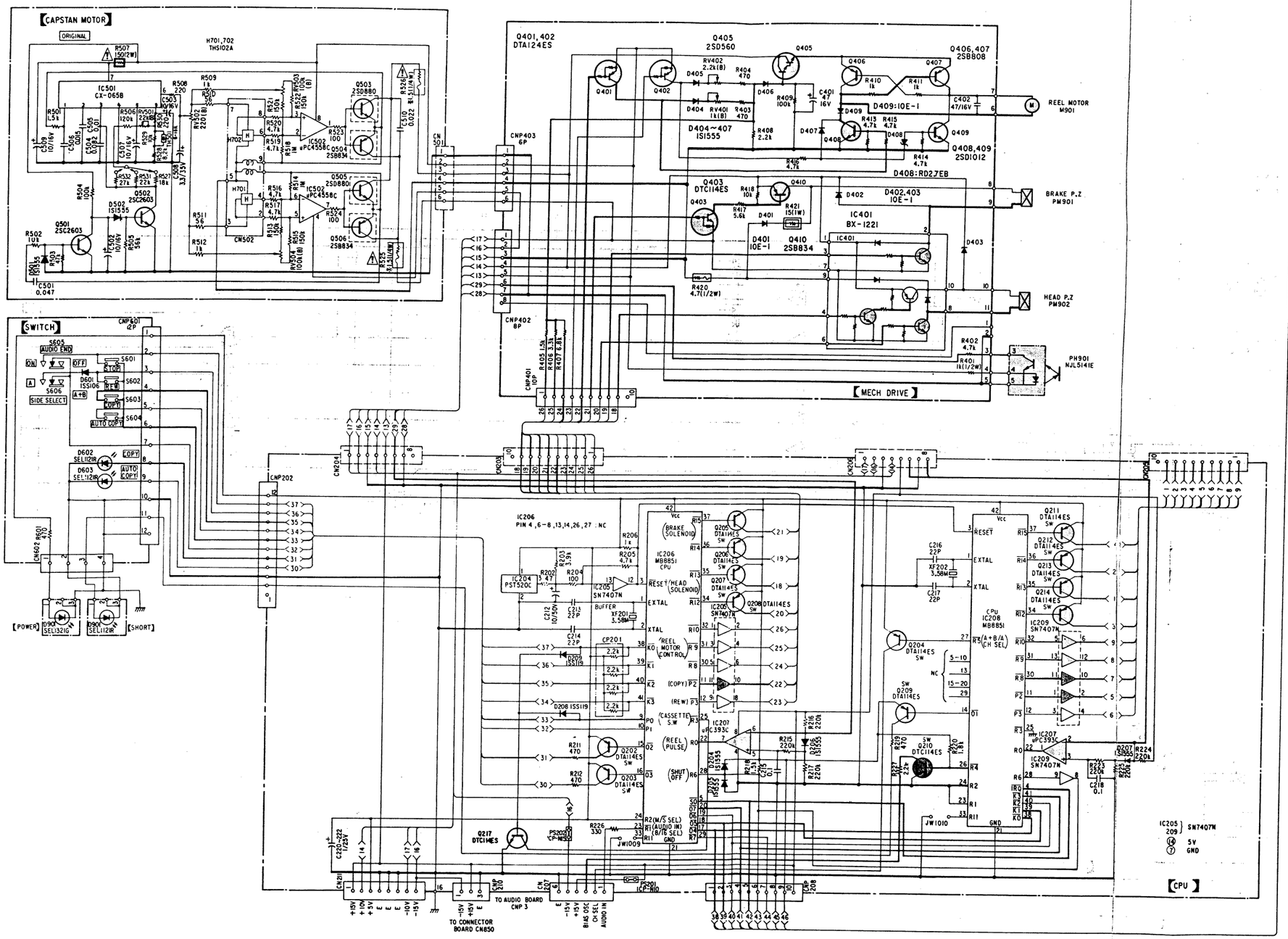


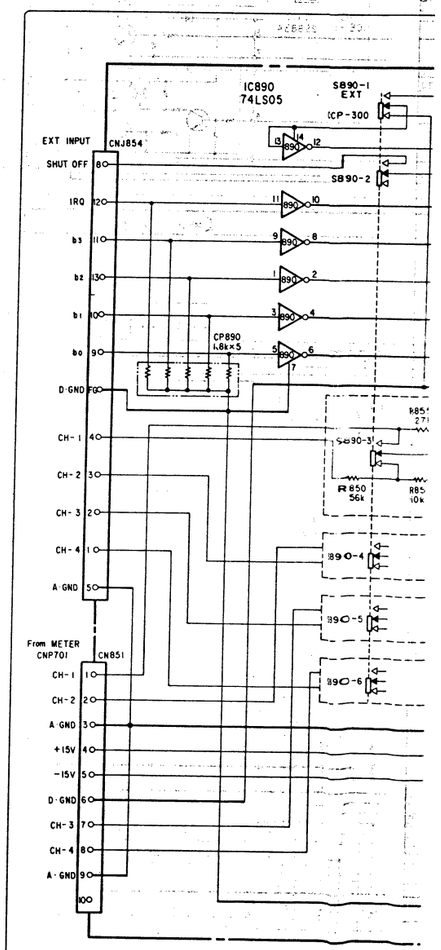


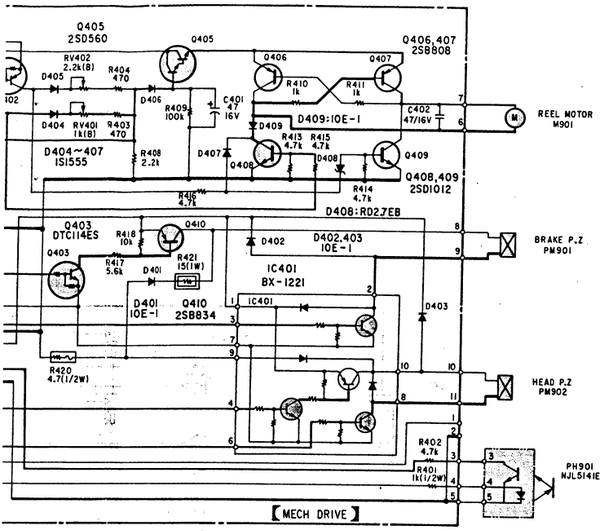
2-2. OPERATION STATE

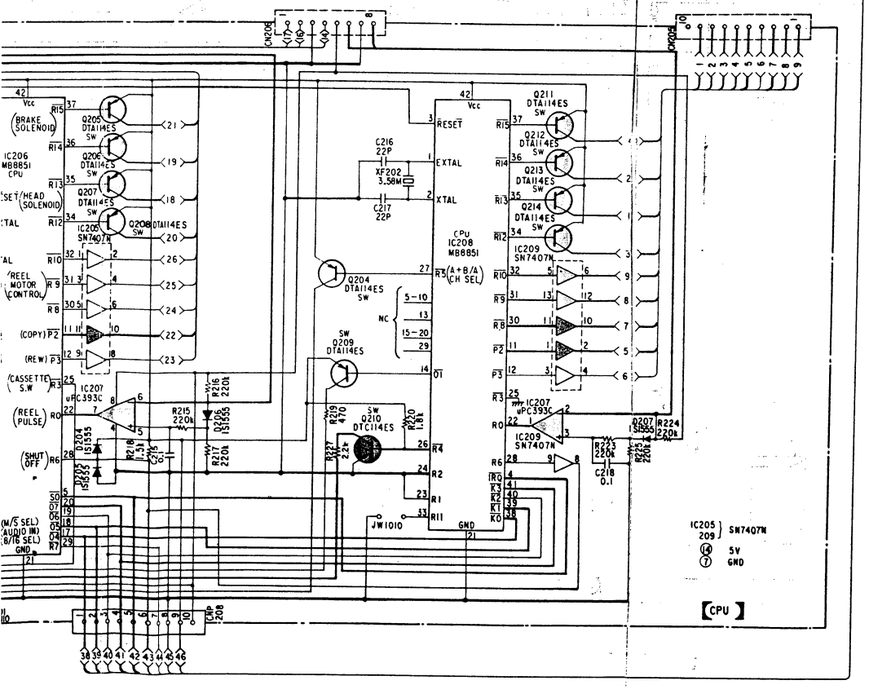
▬◐ ; Operating or high portion （動作またはHighの個所）
▬● ; Operating or low portion （動作またはlowの個所）

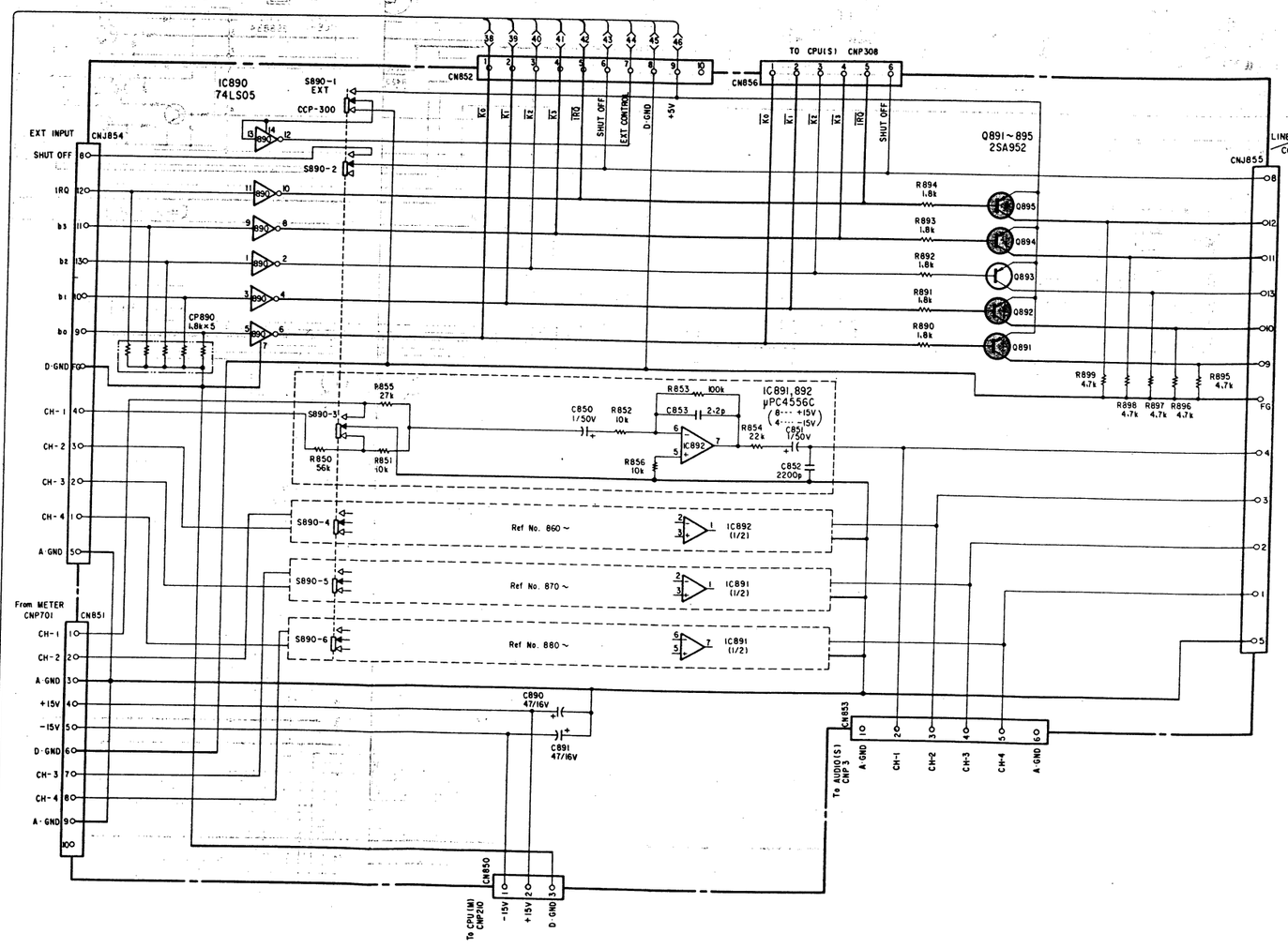
STOP → COPY
CPU (M)



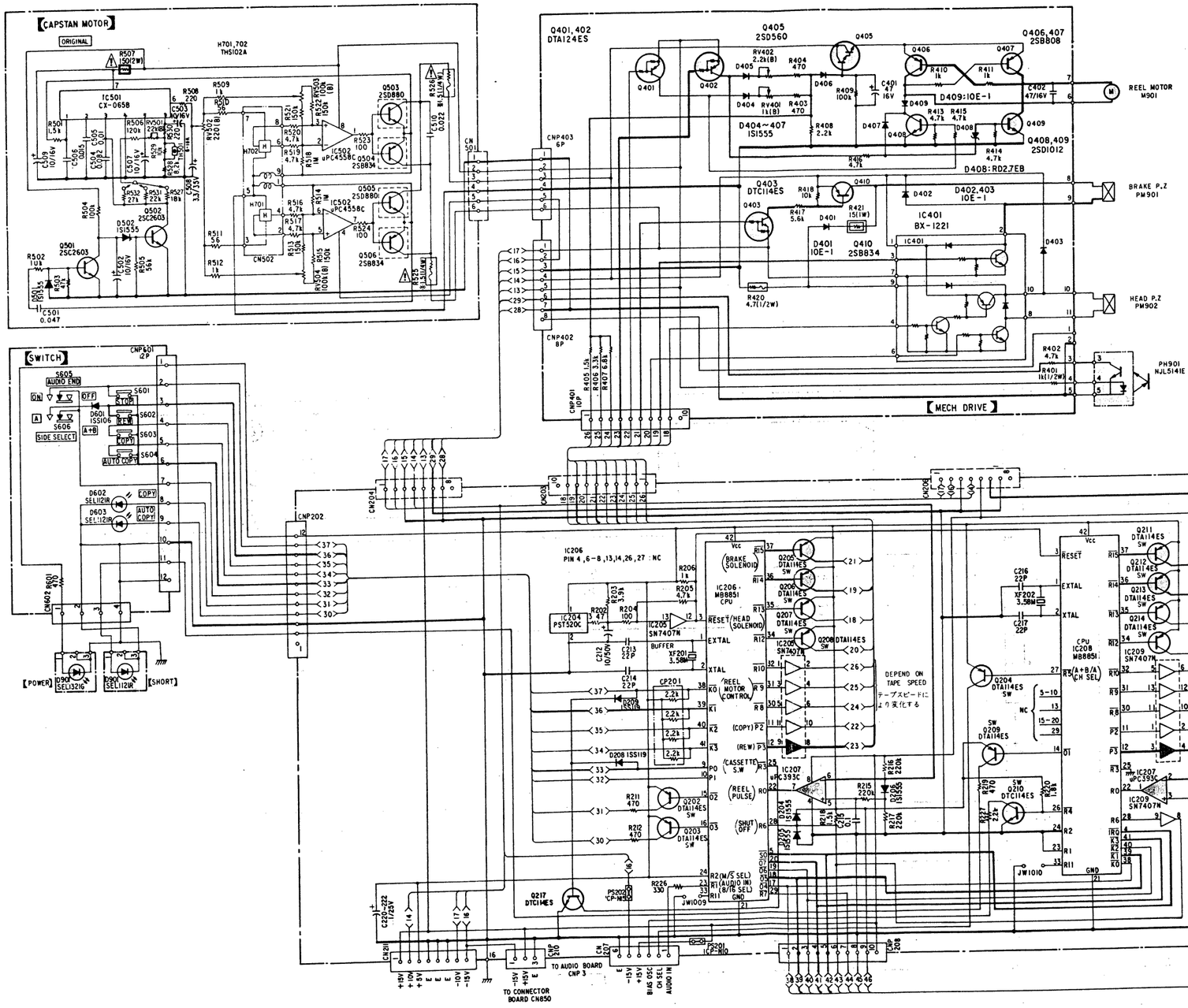


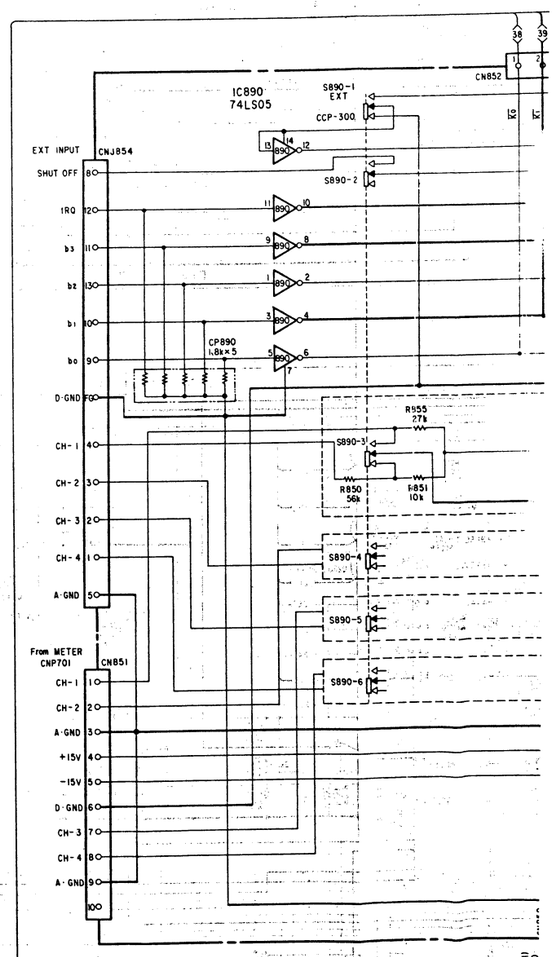

Q405
2SD560
Q405
Q406,407
2SB808
RV402
2.2k(B)
R404
470
D405
D406
R409
100k
C401
47
16V
Q406
Q407
R410
1k
R411
1k
D409:10E-1
C402
47/16V
REEL MOTOR
M901
D404
RV401
1k(B)
R403
470
D404~407
1S1555
R408
2.2k
D407
D409
R413
4.7k
R415
4.7k
Q409
D408
Q408,409
2SD1012
R414
4.7k
R416
4.7k
D408:RD2.7EB
Q403
DTC114ES
R418
10k
Q410
D402
D402,403
10E-1
BRAKE P.Z
PM901
Q403
R417
5.6k
R421
15(1W)
IC401
BX-1221
D401
D401
10E-1
Q410
2SB834
IC401
D403
R420
4.7(1/2W)
HEAD P.Z
PM902
R402
4.7k
R401
1k(1/2W)
PH901
NJL5141E
【MECH DRIVE】

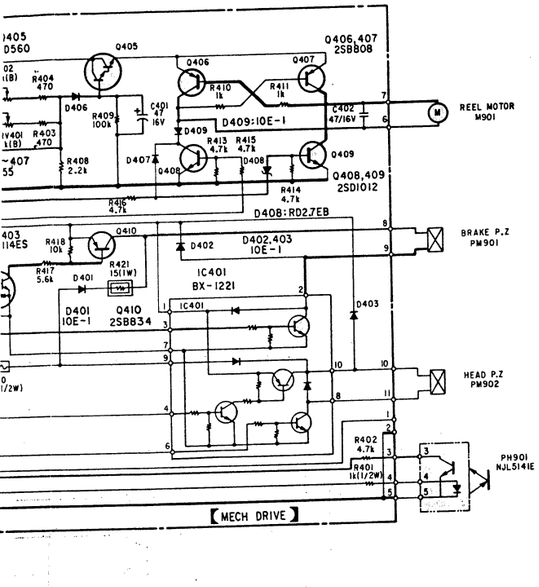

Vcc
(BRAKE SOLENOID)
Q205
DTA114ES
SW
IC206
MB8851
CPU
(HEAD SOLENOID)
Q207
DTA114ES
SW
Q208
DTA114ES
SW
IC205
SN7407N
(REEL MOTOR CONTROL)
(COPY) P2
(REW) P3
/CASSETTE S.W
IC207
μPC393C
(REEL PULSE)
(SHUT OFF)
(M/S SEL)
(AUDIO IN) (B/A SEL)
GND
R216
220k
R215
220k
R206
1S1555
R218
1M
R205
1S1555
R217
220k
C214
0.1
C216
22P
XF202
3.58M
C217
22P
CPU
IC208
MB8851
RESET
EXTAL
XTAL
Q204
DTA114ES
SW
NC
5-10
15-20
SW
Q209
DTA114ES
R209
470
SW
Q210
DTC114ES
R210
1.8k
R227
22k
JW1010
GND
Q211
DTA114ES
SW
Q212
DTA114ES
Q213
DTA114ES
Q214
DTA114ES
IC209
SN7407N
IC207
μPC393C
R223
220k
R207
1S1555
R224
220k
C218
0.1
IC205 SN7407N
14 5V
7 GND
【CPU】

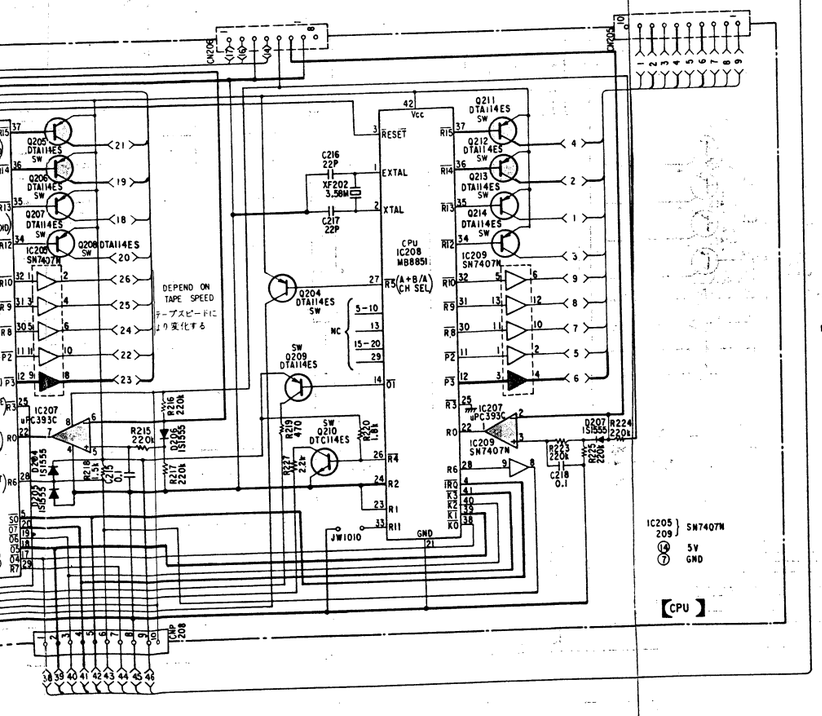

IC890
74LS05
S890-1
EXT
CCP-300
S890-2
CN852
TO CPU(S) CNP308
CN856
KG
K1
K2
K3
IRQ
SHUT OFF
EXT CONTROL
D GND
+5V
EXT INPUT
CNJ854
SHUT OFF
IRQ
b3
b2
b1
b0
D-GND
CH-1
CH-2
CH-3
CH-4
A-GND
CP890
1.8k×5
Q891~895
2SA952
R894
1.8k
R893
1.8k
R892
1.8k
R891
1.8k
R890
1.8k
Q895
Q894
Q893
Q892
Q891
LINE
CONTROL
OUTPUT
CNJ855
R899
4.7k
R898
4.7k
R897
4.7k
R896
4.7k
R895
4.7k
FG
S890-3
R855
27k
R850
56k
R851
10k
C850
1/50V
R852
10k
R853
100k
C853
2.2p
IC892
R854
22k
C851
1/50V
R856
10k
C852
2200p
IC891,892
μPC4556C
(8··· +15V)
(4··· -15V)
S890-4
Ref No. 860 ~
IC892
(1/2)
S890-5
Ref No. 870 ~
IC891
(1/2)
S890-6
Ref No. 880 ~
IC891
(1/2)
From METER
CNP701
CN851
CH-1
CH-2
A-GND
+15V
-15V
D-GND
CH-3
CH-4
A-GND
C890
47/16V
C891
47/16V
CN853
To AUDIO(S)
CNP3
A-GND
CH-1
CH-2
CH-3
CH-4
A-GND
CN850
To CPU(M)
CNP210
-15V
+15V
D-GND

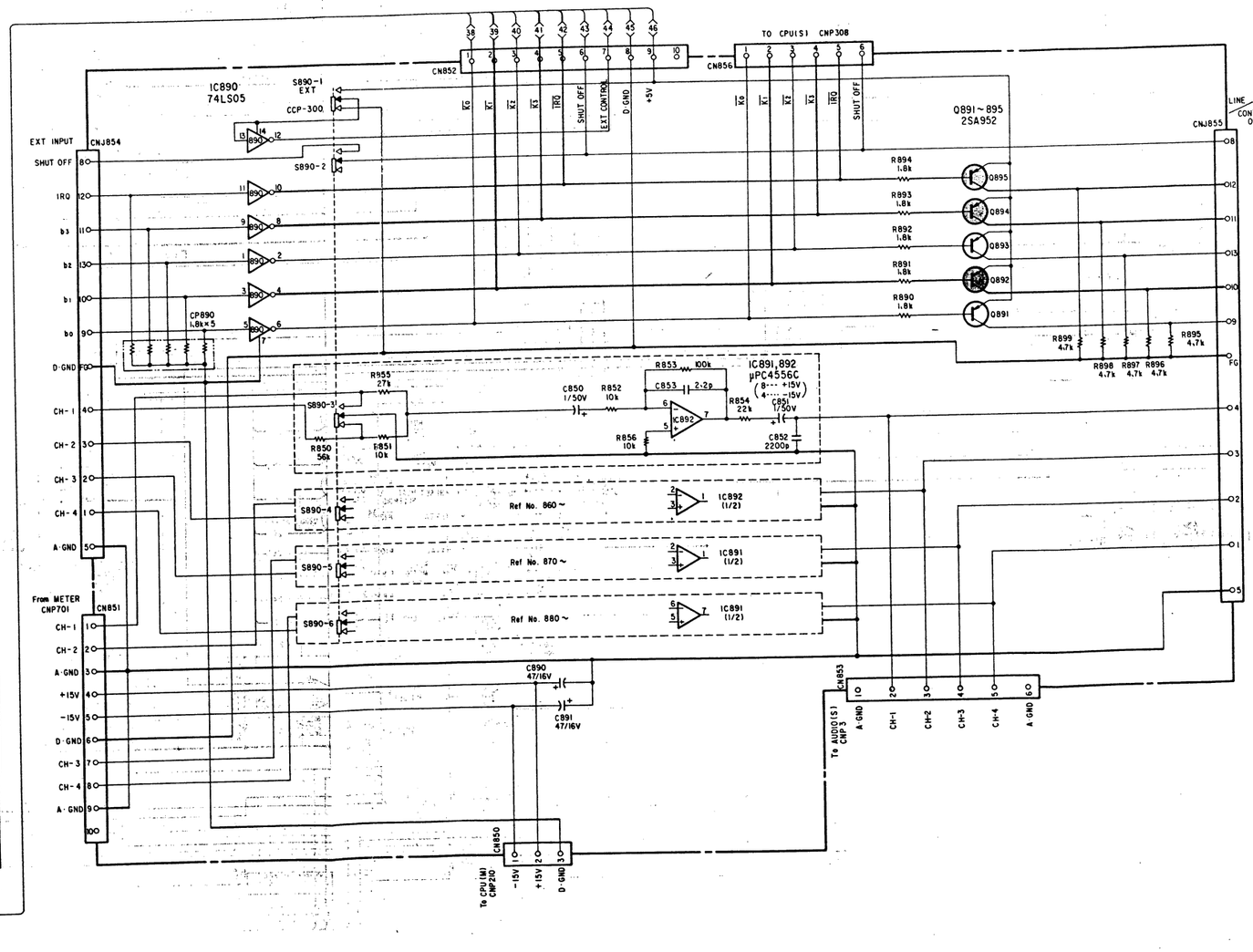
TOP → REWIND
PU (M)



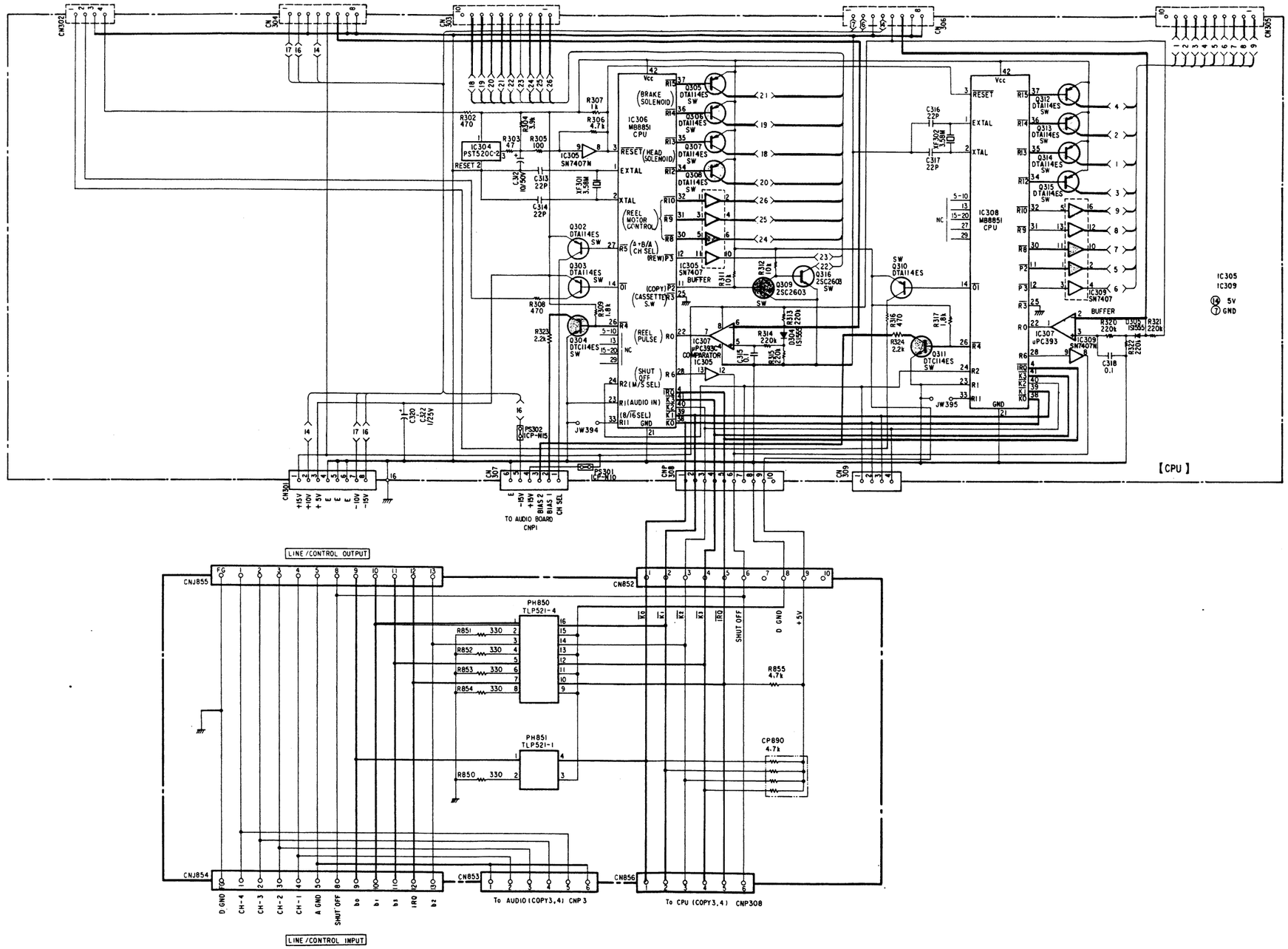



Q405
Q406,407
2SB808
Q406
Q407
R410 1k
R411 1k
D406
R409 100k
C401 47 16V
D409:10E-1
C402 47/16V
REEL MOTOR M901
D409
R413 4.7k
R415 4.7k
D407
D408
Q409
Q408,409
2SD1012
R408 2.2k
R414 4.7k
R416 4.7k
D408:RD27EB
Q410
D402
D402,403
10E-1
BRAKE P.Z PM901
R418 10k
R417 5.6k
D401
R421 15Ω(1W)
IC401
BX-1221
D401 10E-1
Q410 2SB834
D403
HEAD P.Z PM902
R402 4.7k
R401 1k(1/2W)
PH901 NJL5141E
【MECH DRIVE】

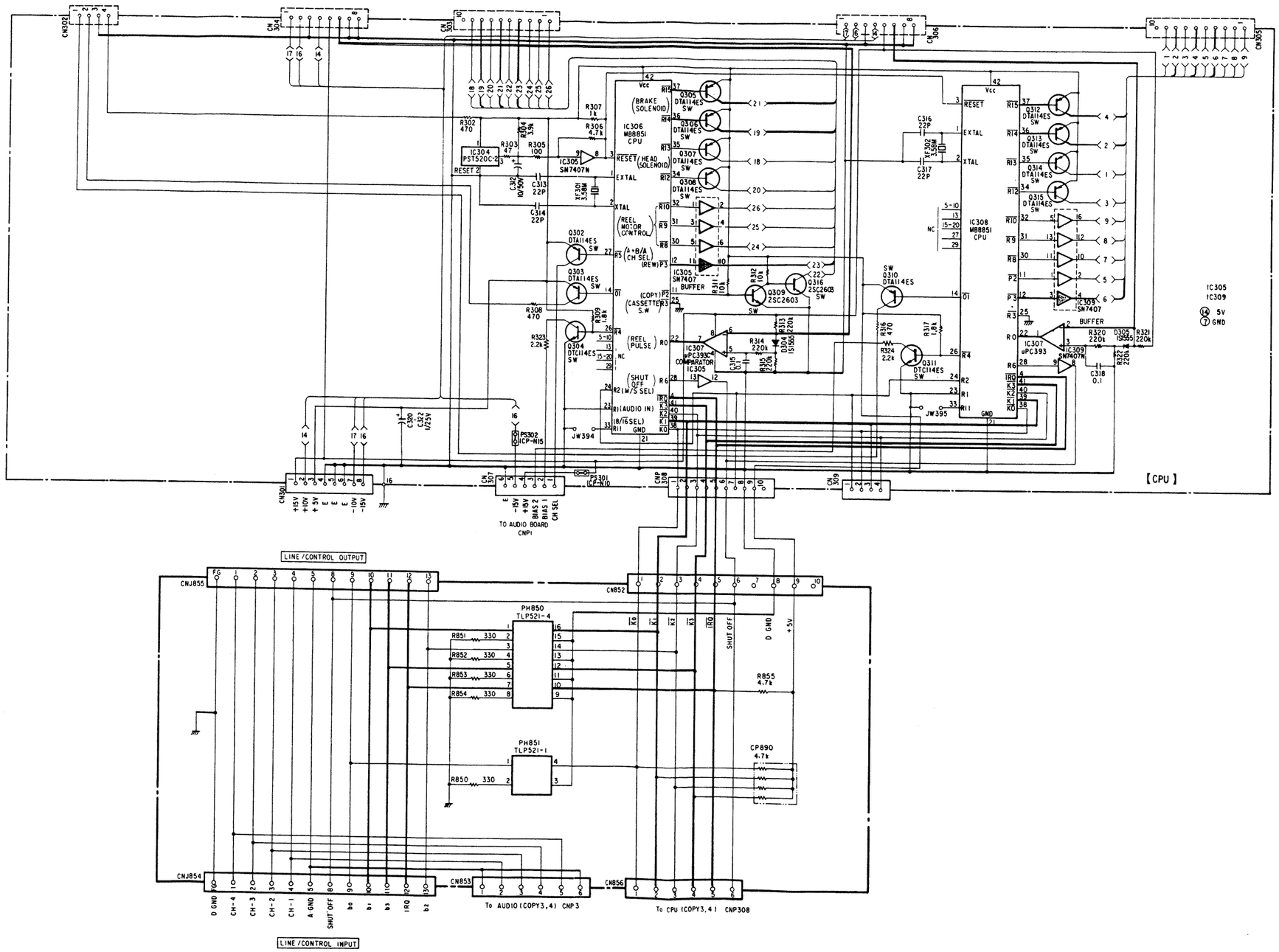

Q208 DTA114ES SW
Q205 DTA114ES SW
Q206 DTA114ES SW
Q207 DTA114ES SW
Q208 DTA114ES SW
IC206 SN74079N
DEPEND ON TAPE SPEED
テープスピードにより変化する
IC207 μPC393C
R215 220k
R216 220k
R217 220k
D205 1S1555
D206 1S1555
D207 1S1555
R218 10k
C215 0.1
C216 22P
XF202 3.58M
C217 22P
CPU IC208 MB8851
RESET
EXTAL
XTAL
Vcc
GND
JW1010
Q204 DTA114ES SW
SW Q209 DTA114ES
SW Q210 DTC114ES
R219 470
R220 10k
R221 47k
R227 22k
5-10
NC
15-20
29
Q211 DTA114ES SW
Q212 DTA114ES SW
Q213 DTA114ES SW
Q214 DTA114ES SW
IC209 SN7407N
IC207 μPC393C
R223 220k
R224 220k
D207 1S1555
C218 0.1
IC205 209 SN7407N
5V
GND
【CPU】
CNP208


IC890 74LS05
S890-1 EXT
CCP-300
S890-2
CN852
CN856
TO CPU(S1) CNP308
EXT INPUT
CNJ854
SHUT OFF
IRQ
b3
b2
b1
b0
D-GND
CH-1
CH-2
CH-3
CH-4
A-GND
CP890 1.8k×5
R555 27k
S890-3
R850 56k
R851 10k
C850 1/50V
R852 10k
R853 100k
C853 2.2p
IC891,892 μPC4556C (8--- +15V) (4--- -15V)
IC892
R854 22k
C851 1/50V
R856 10k
C852 2200p
S890-4
Ref No. 860~
IC892 (1/2)
S890-5
Ref No. 870~
IC891 (1/2)
S890-6
Ref No. 880~
IC891 (1/2)
From METER CNP701
CN851
C890 47/16V
C891 47/16V
CN850
To CPU(M) CNP210
-15V
+15V
D-GND
Q891~895 2SA952
R894 1.8k
R893 1.8k
R892 1.8k
R891 1.8k
R890 1.8k
Q895
Q894
Q893
Q892
Q891
R899 4.7k
R898 4.7k
R897 4.7k
R896 4.7k
R895 4.7k
CNJ855
LINE CONTROL OUTPUT
CN853
To AUDIO(S) CNP3
A-GND
CH-1
CH-2
CH-3
CH-4
A-GND

STOP → COPY
CPU (S)



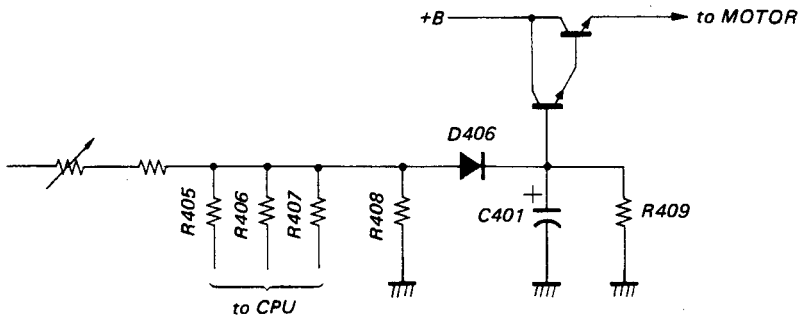
STOP → REWIND
CPU (S)



2-3. REEL MOTOR VOLTAGE CONTROL (in REW mode)

To shorten rewind time, a reel motor voltage is raised gradually from start of rewinding operation, however, to absorb a shock at the completion of rewinding, the voltage is controlled so that Reel table rotation does not exceed 900 rpm.
This control is made by grounding R405, R406, and R407 on the Mech drive board by CPU.

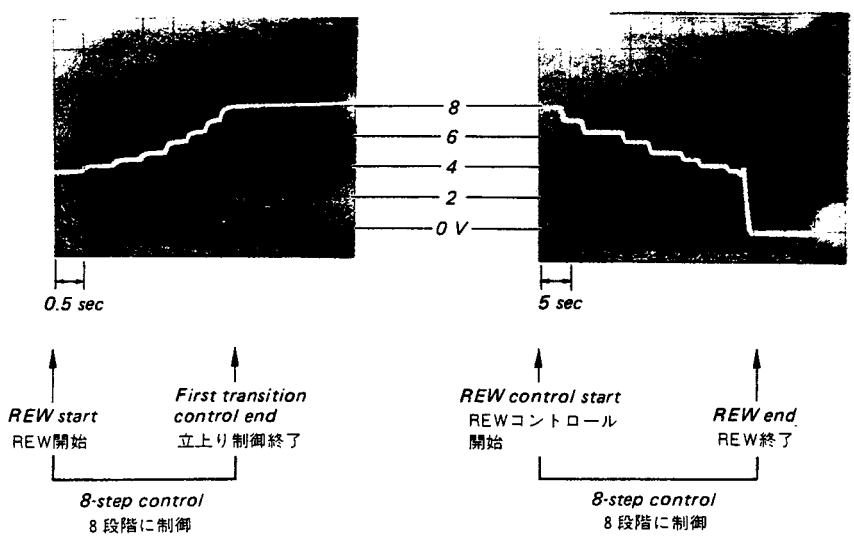
REW時間を短かくするため，リールモーター電圧を REW 開始時から徐々に高めてゆくが，巻き終りの衝撃を和らげるため，リール台の回転が，900rpm以上にはならないように制御して いる。
この制御は，メカドライブ基板のR405，406，407を CPU にてアースすることで行っている。



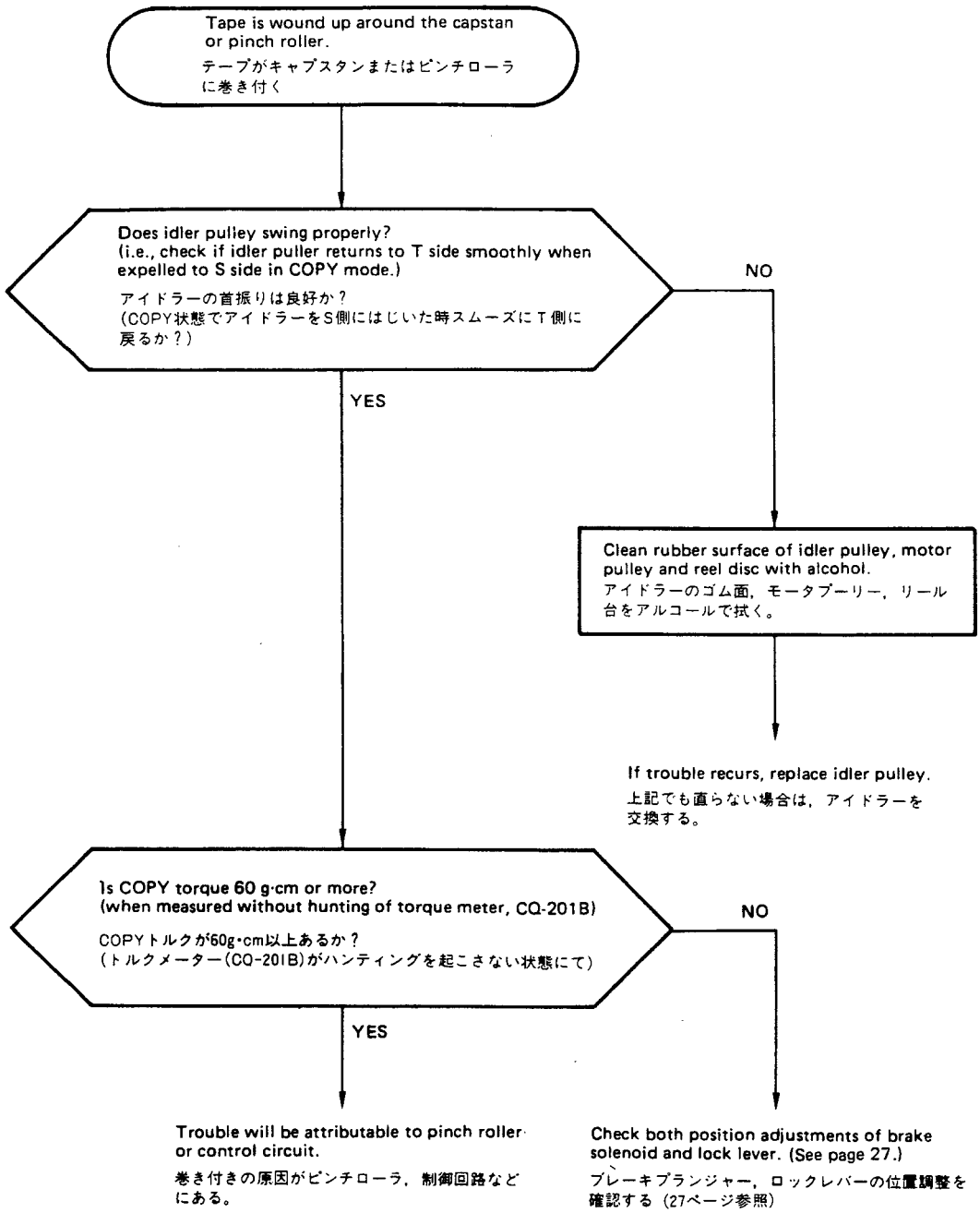
C401 and R409 are inserted to smooth a voltage change to prevent a tape from slackening.

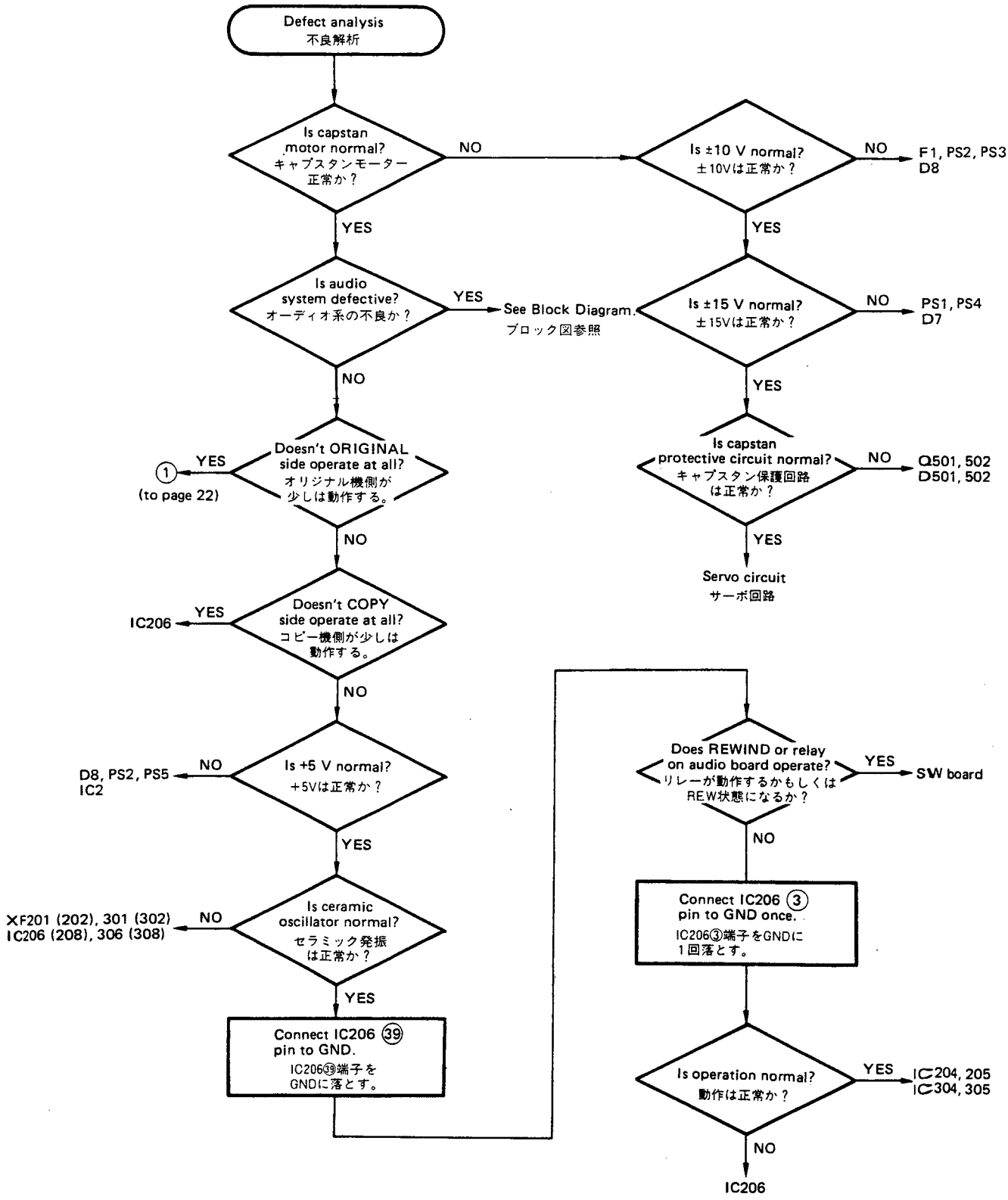
C401，R409は，電圧変化を滑らかにし，テープのたるみを防止するために入れてある。

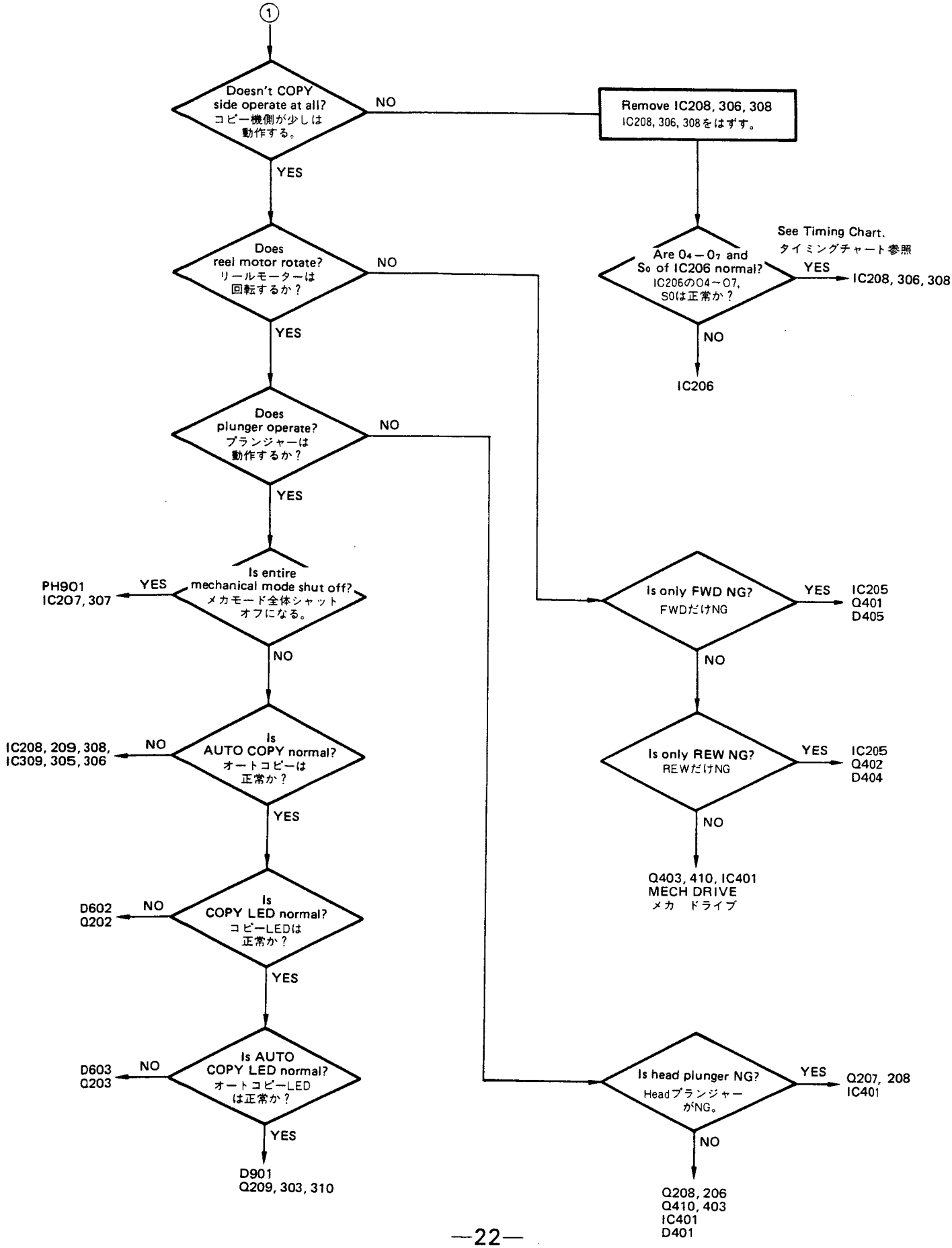
Waveform of reel motor voltage
リールモータ端子電圧の波形



SECTION 3
TROUBLE SHOOTING


Tape is wound up around the capstan or pinch roller.
テープがキャプスタンまたはピンチローラに巻き付く
Does idler pulley swing properly?
(i.e., check if idler puller returns to T side smoothly when expelled to S side in COPY mode.)
アイドラーの首振りは良好か？
(COPY状態でアイドラーをS側にはじいた時スムーズにT側に戻るか？)
NO
YES
Clean rubber surface of idler pulley, motor pulley and reel disc with alcohol.
アイドラーのゴム面，モータプーリー，リール台をアルコールで拭く。
If trouble recurs, replace idler pulley.
上記でも直らない場合は，アイドラーを交換する。
Is COPY torque 60 g·cm or more?
(when measured without hunting of torque meter, CQ-201B)
COPYトルクが60g·cm以上あるか？
(トルクメーター(CQ-201B)がハンティングを起こさない状態にて)
NO
YES
Trouble will be attributable to pinch roller or control circuit.
巻き付きの原因がピンチローラ，制御回路などにある。
Check both position adjustments of brake solenoid and lock lever. (See page 27.)
ブレーキプランジャー，ロックレバーの位置調整を確認する (27ページ参照)


Defect analysis
不良解析
Is capstan motor normal?
キャプスタンモーター正常か？
NO
Is ±10 V normal?
±10Vは正常か？
NO
F1, PS2, PS3
D8
YES
YES
Is audio system defective?
オーディオ系の不良か？
YES
See Block Diagram.
ブロック図参照
Is ±15 V normal?
±15Vは正常か？
NO
PS1, PS4
D7
NO
YES
Doesn't ORIGINAL side operate at all?
オリジナル機側が少しは動作する。
YES
(1)
(to page 22)
Is capstan protective circuit normal?
キャプスタン保護回路は正常か？
NO
Q501, 502
D501, 502
NO
YES
Servo circuit
サーボ回路
Doesn't COPY side operate at all?
コピー機側が少しは動作する。
YES
IC206
NO
Is +5 V normal?
+5Vは正常か？
NO
D8, PS2, PS5
IC2
YES
Is ceramic oscillator normal?
セラミック発振は正常か？
NO
XF201 (202), 301 (302)
IC206 (208), 306 (308)
YES
Connect IC206 (39) pin to GND.
IC206㊴端子をGNDに落とす。
Does REWIND or relay on audio board operate?
リレーが動作するかもしくはREW状態になるか？
YES
SW board
NO
Connect IC206 (3) pin to GND once.
IC206③端子をGNDに1回落とす。
Is operation normal?
動作は正常か？
YES
IC204, 205
IC304, 305
NO
IC206


①
Doesn't COPY side operate at all?
コピー機側が少しは動作する。
NO
Remove IC208, 306, 308
IC208, 306, 308をはずす。
YES
Does reel motor rotate?
リールモーターは回転するか？
NO
Are O4－O7 and So of IC206 normal?
IC206のO4－O7, S0は正常か？
See Timing Chart.
タイミングチャート参照
YES
IC208, 306, 308
NO
IC206
YES
Does plunger operate?
プランジャーは動作するか？
NO
YES
Is entire mechanical mode shut off?
メカモード全体シャットオフになる。
PH901
IC207, 307
YES
NO
Is only FWD NG?
FWDだけNG
YES
IC205
Q401
D405
NO
Is AUTO COPY normal?
オートコピーは正常か？
IC208, 209, 308,
IC309, 305, 306
NO
YES
Is only REW NG?
REWだけNG
YES
IC205
Q402
D404
NO
Q403, 410, IC401
MECH DRIVE
メカ　ドライブ
Is COPY LED normal?
コピーLEDは正常か？
D602
Q202
NO
YES
Is AUTO COPY LED normal?
オートコピーLEDは正常か？
D603
Q203
NO
YES
D901
Q209, 303, 310
Is head plunger NG?
Headプランジャーがng。
YES
Q207, 208
IC401
NO
Q208, 206
Q410, 403
IC401
D401

SECTION 4
CHECK AND MAINTENANCE

The folowing parts need a periodical check and a replacement. Do the cleaning, inspect and replace at the standard of the time on the list.

つぎの部品は定期点検，交換を必要とします。表に示された時間を目安として清掃，点検，交換を行ってください。

1-541-163-00

Item	Part No.	Ref. No.	Operating Hours								Note
			500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	
Tape Guide	8-825-724-00	76	○	○	○	◆	○	○	○	◆	
Reel Motor ~~Ass'y~~	~~A-2133-112-A~~	M901, 902	–	◇	◇	◆	–	◇	◇	◆	
Capstan Motor	1-541-316-11	505	○	○	○	○	○	◇	◇	◇	
Reel Table Ass'y	X-3162-317-1	52	○	◇	◇	◆	○	◇	◇	◆	
Cluth Felt	3-162-310-01	54	–	–	–	◆	–	–	–	◆	Supply side
B.T. Ring	3-162-356-01	55									Supply side
Reflector	3-155-352-00	57									Take Up side
Idler Pully Ass'y	A-2191-025-A	53	○	◇	◇	◆	○	◇	◇	◆	
Pinch Roller Ass'y	X-3162-306-1	91									
Brake Rubber	3-162-366-01	43	–	–	–	◆	–	–	–	◆	

○: Cleaning 清掃　◇: Inspection 点検　◆: Exchange 交換

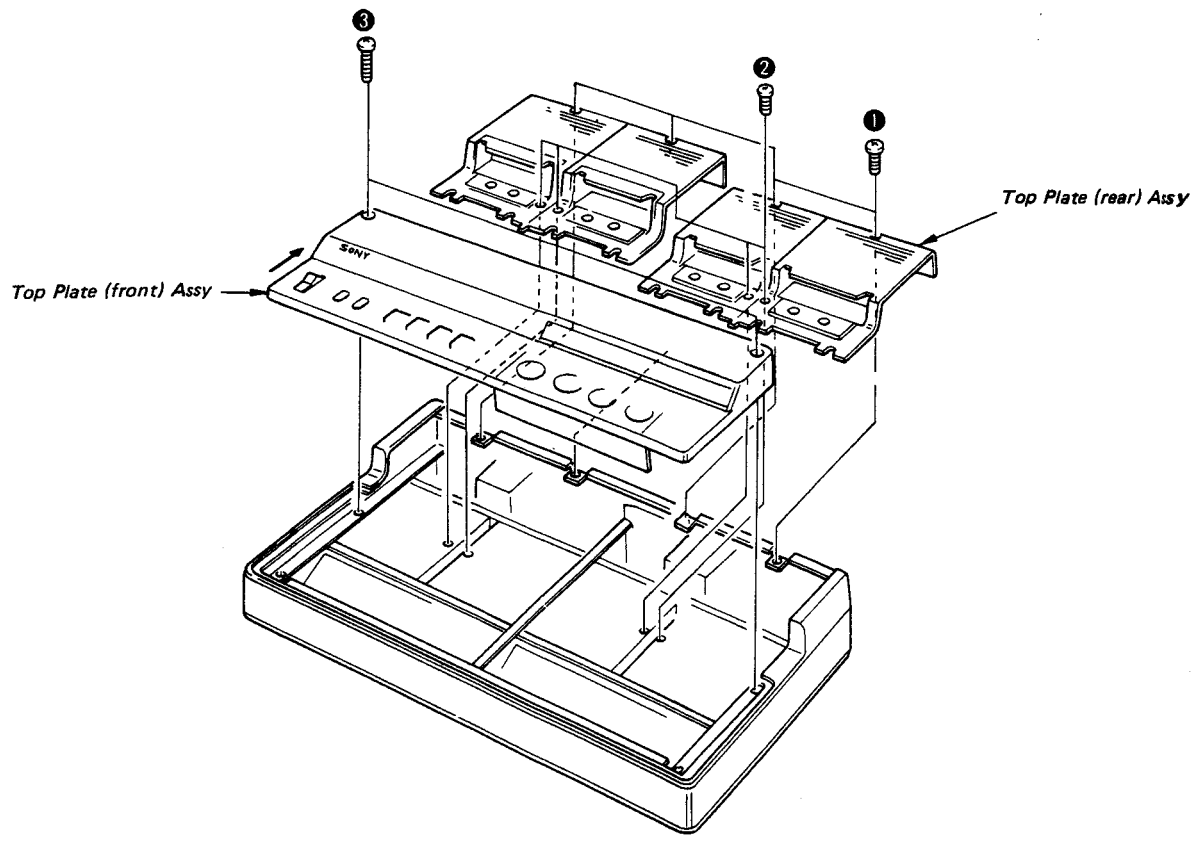
PROCEDURE OF HEAD REPLACEMENT

1. Take out the ❶ and ❷ screws and remove the Top Plate (rear) Assy.
2. Take out the ❸ screw and push ↗ direction and remove the Top Plate (front) Assy. (Refer to the method in 5-1 CAUTION.)

ヘッド交換の手順

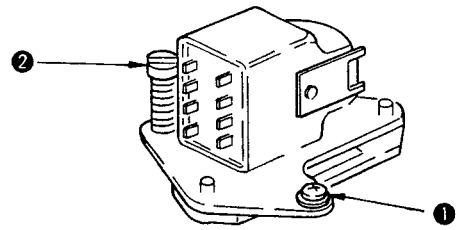
1．ねじ❶，❷を外し，天板組立(後)を外す。

2．ねじ❸を外し，天板組立(前)を↗方向に押して外す。(5-1．CAUTIONに着脱方法について説明してあります。)



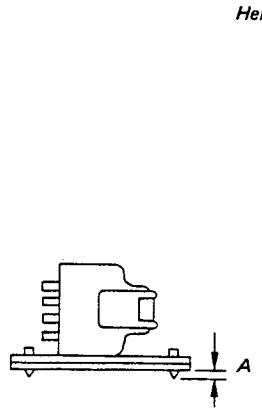
3. Unsolder the Head leads (after removing the Head shield in the ORIGINAL unit).
4. Take out the ❶ and ❷ screws securing the Head.

3．ヘッドのリード線の半田付をはずす。(オリジナル機はヘッドシールド板をはずしてから)
4．ヘッドを固定しているねじ❶, ❷を外す。

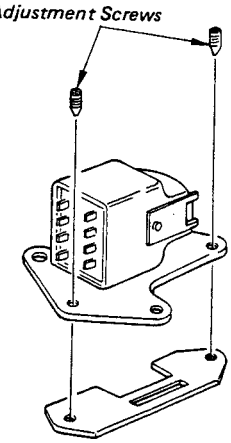


5. Measure the stick out length A of the Height Adjustment Screw.
Thread a new Spacer through the new Head and fasten the new Height Adjustment Screws. Adjust the screws to the stick out length A.

5．高さ調整ねじの突き出し量Aを測る。新しいヘッドに新しいスペーサーを通し，新しい高さ調整ねじを取付ける。
このとき，同じ突き出し量になるようにねじを調整する。

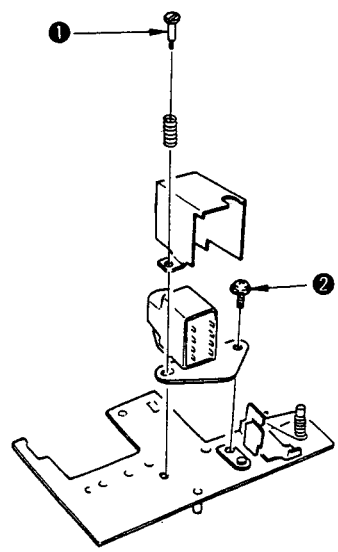


Height Adjustment Screws



6. Replace the Spacer of the Head Chassis Assy with a new Spacer.

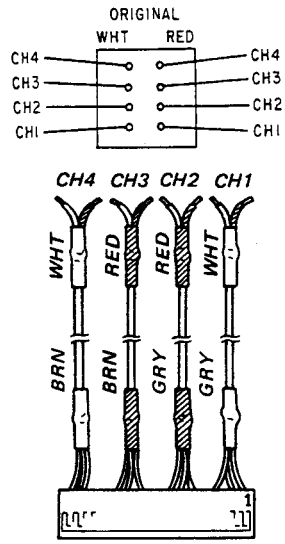
6．ヘッド基台のスペーサーを新しいスペーサーと交換する。



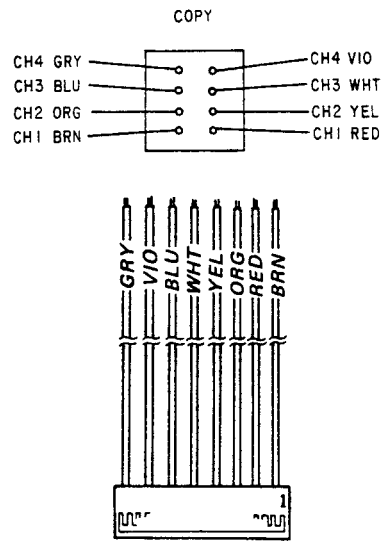
7. Secure the Head with the ❶ and ❷ screws. The ❶ screw is not for adjustment and should be tightened. Adjust the Head parallel to the Head Chassis Assy temporary with tightening the ❷ screw.

7．ねじ❶, ❷でヘッドを固定する。❶のねじは調整用ではないので最後まで締め，❷のねじを締めながら，ヘッド基台とほぼ平行になるよう仮調整する。

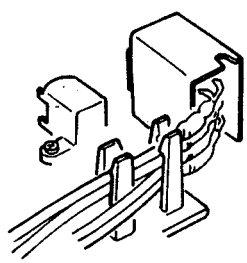
8. Solder the Head leads.



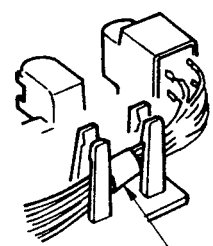
8．ヘッドのリード線をハンダ付けする。



9. Put the leads in the lead clamper.
ORIGINAL unit



9．リード線を，リードクランパーに入れる。
COPY unit



In the COPY unit, put the leeds using the tube.
コピー機は，チューブを使って入れる。

SECTION 5
ADJUSTMENT

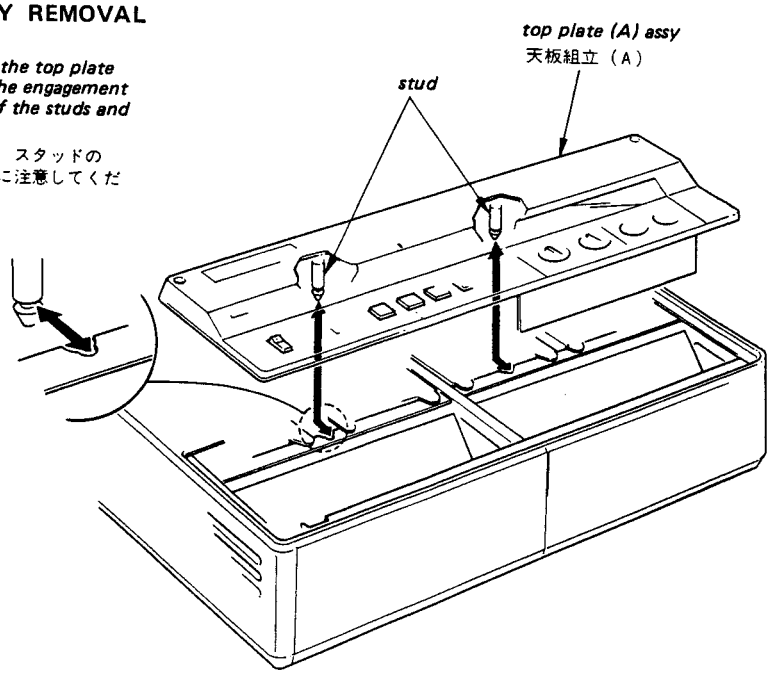
5-1. CAUTION

TOP PLATE (A) ASSY REMOVAL

In attaching and removing the top plate (A) assy, take care about the engagement between the narrow part of the studs and frame.

天板組立（A）の着脱時には，スタッドのくびれとフレームの噛み合いに注意してください。

天板組立（A）の取り外し



SWITCHING THE MODE IN ONLY THE CCP-314

Select the slide switch (S601) on the MAINTENANCE board at the rear of FRONT TOP PLATE to MAINTENANCE side from NOP side, before power on the CCP-314.

Note: If select the slide switch after power on the CCP-314, the switch for MAINTENANCE dose not act.

CCP-314単独でのモード切換方法

CCP-314に電源を投入する前に，メンテナンス基板(FRONT TOP PLATE の裏にあります。）上のスライドスイッチ（S601）をNOP側からMAINTENANCE側に切り換えます。

注）電源投入後にスライドスイッチ（S601）を切り換えてもMAINTENANCE用スイッチは動作しません。

5-2. TEST TAPE

Type	Part No.	Signal	
		Frequnecy (Hz)	Level (dB)
P-4-L300	7-819-011-11	315	0
P-4-A063	7-819-014-11	6.3 k	−10
P-4-A100	7-819-016-11	10 k	−10
WS-48A	7-819-032-11	3 k	0
CQ-012C	8-909-708-02	Mirror, 12μ base	
CQ-201B	8-909-708-41	Torque	

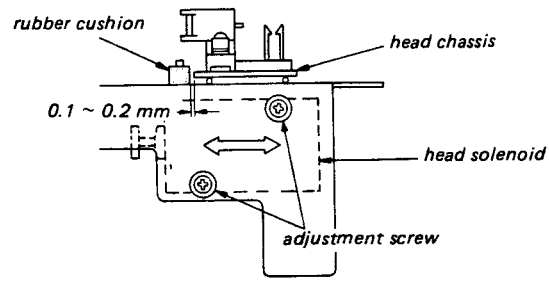
5-3. MECHANICAL ADJUSTMENT

Head Solenoid Position Adjustment

Mode: COPY

Adjust the head solenoid position so that the head chassis comes in position relate to the rubber cushion as shown in the figure.

ヘッド基板の位置がゴムクッションに対して，図のようになるよう，ヘッドプランジャーの位置を調整する。

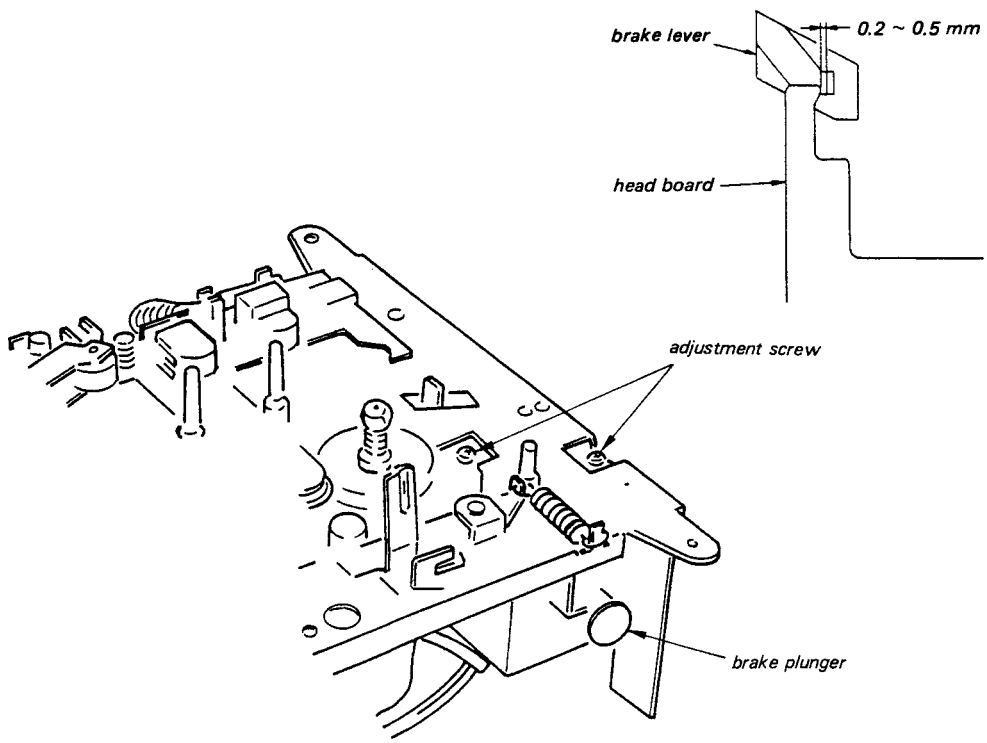


Lock Lever Position Adjustment

Mode: COPY

1. Make the brake solenoid operated (by manually pushing in the plunger as far as it will go).
2. Adjust the brake plunger position so that a clearance between head board and brake lever is made as shown in figure.

1．ブレーキプランジャーをON状態にする。
（手で一杯まで押し込む）
2．ヘッド基板とブレーキレバーのすき間が図の様になるようブレーキプランジャーの位置を調整します。



Capstan Motor Adjustment (Offset, Balance)

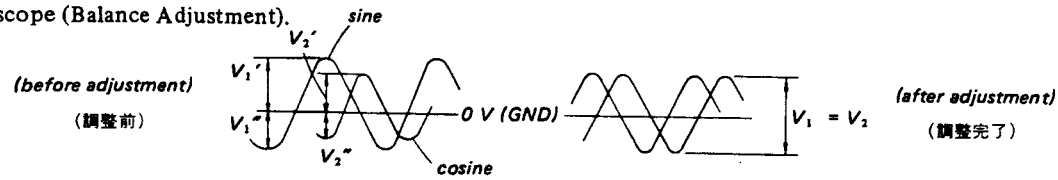
Setting:

Output . . . . . CN502 PIN 1, 9 (Capstan Motor Board)
Mode . . . . . STOP

Procedure:

1. Adjust the position control of the oscilloscope to center the trace over the center graticule line for two inputs.
2. Adjust RV503 and RV504 so that V1′ is equal to V1″ and V2′ is equal to V2″ on the oscilloscope (Offset Adjustment).
3. Adjust RV502 so that V1 is equal to V2 on the oscilloscope (Balance Adjustment).

1．シンクロスコープの0Vの軌跡を2入力とも同じ位置に合わせる。
2．$V_1' = V_1''$, $V_2' = V_2''$になるようRV503, 504を調整する(オフセット調整)。
3．$V_1 = V_2$となるよう，RV502を調整する(バランス調整)。



Capstan Motor Adjustment (CCP-310)

Setting:

Output . . . . . CN855 PIN 4, 5 (CONNECTOR BOARD)

Procedure:

1. Execute playback (COPY mode) of the test tape (WS-48A).
2. Adjust RV501 so that the following specification is fulfilled in the middle of the tape.

1．テストテープ(WS-48A)を再生(COPY状態)する。
2．テープの中央で，周波数が，規格を満足するようRV501を調整する。

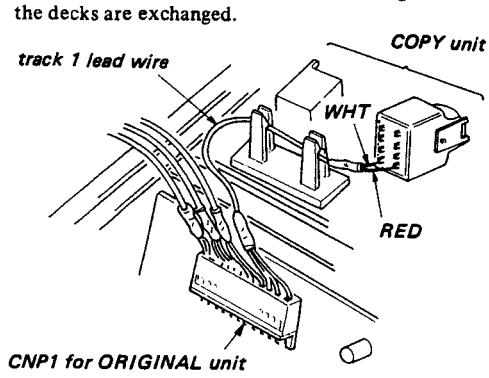
Specifications:

24 kHz ±0.5% (ORIGINAL)
23.76 kHz ±0.5% (COPY)

Note:

1. Adjust the capstan motor of the COPY unit by utilizing the playback-amplifier of the ORIGINAL unit after exchanging decks each other.
2. To exchange each deck, exchange two connectors coming from the CPU board and also exchange head terminal by soldering.
3. As shown in the specification above, a speed difference is given between ORIGINAL unit and COPY unit (1%) so as to avoid omission of recording due to variation in tape length.
4. Both offset and balance should be adjusted before this adjustment.
5. When the head azimuth adjustemnt is needed in the COPY unit, perform the adjustment during this time that the decks are exchanged.

1．COPY機については，デッキをORIGINAL機と交換してその再生アンプを利用して調整する。
2．デッキを交換するには，CPU基板からの2本のコネクターは差し換え，ヘッド端子はハンダで付け換える。
3．規格に掲げたとおりテープ長さのバラツキによって，録音されない部分の出ることを防ぐため，ORIGINAL機とCOPY機にスピード差を設けています。(1%)
4．この調整の前には，オフセット，バランス調整が行なわれていること。
5．COPY機のヘッド垂直調整の必要がある時は，デッキを交換してあるこの時行うこと。



Capstan Motor Adjustment (CCP-314)

1. Connect to CCP-310.
2. Duplicate the test tape (WS-48A) on a blank tape.
3. Playback the recorded portion with a standard playback unit.
4. Unless a frequency obtained in the middle of the tape falls in the specification, make adjustment by turning RV501.

1．CCP-310と接続する。
2．テストテープ(WS-48A)を未収録テープにCOPYする。
3．録音したテープを標準再生機で再生する。
4．テープの中央で周波数が規格に入らない場合は，RV501を回して調整する。

Specifications: 3030 Hz ±1%

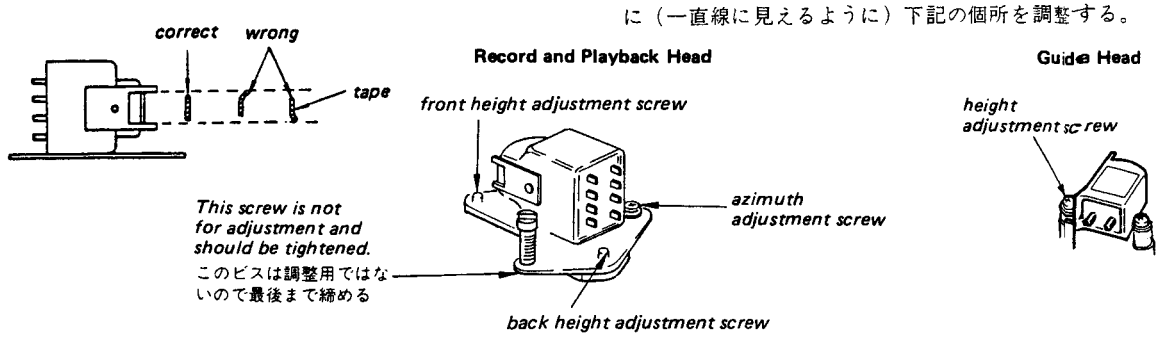
Note:
1. The CCP-310 ORIGINAL unit should properly be adjusted before this adjustment.
2. Both offset and balance should be adjusted before this adjustment.
3. A speed difference is given between ORIGINAL unit and COPY unit (1%) so as to avoid omission of recording due to variation in tape length.
4. The capstan motor will speed up if RV501 is turned clockwise.
5. Adjustment will become easire if you, at first, adjust RV501 so that an output frequency of No. 1 or 9 pin of the CN502 is 160 Hz in a STOP mode without loading a cassette tape.
6. If adjustment is made without using the CCP-310, perform a recording by entering a 24 kHz signal from LINE/CONTROL INPUT terminal. In this case, the specification is 3.030 Hz ±0.5%.
7. Use alternatively the CCP-310 COPY unit method (exchanging decks).

1．この調整の前には，CCP-310 ORIGINAL機のスピードが正しく調整されていること。
2．この調整の前には，オフセット，バランス調整が行なわれていること。
3．テープ長さのバラツキによって，録音されない部分の出ることを防ぐため，ORIGINAL機とCOPY機にスピード差を設けています。(1%)
4．RV501は，時計方向に回すとスピードが上る。
5．STOP状態でカセットテープなしの時のCN502の1又は9番ピン出力の周波数が160Hzになるようにする RV501を仮調整してから行うと，調整し易い。
6．CCP-310を使わないで調整する場合は，LINE/CONTROL INPUTより0dB，24kHzの信号を入れて録音する。この場合の規格は，3,030Hz±0.5%となります。
7．CCP-310のCOPY機の方法で行うこともできます。(デッキ交換方式)

Head Height Adjustment

1. Install a mirror tape cassette (CQ-012C) and depress COPY button and STOP button alternately and watch the tape at tape guide.
2. In COPY mode, if tape is curled along tape guide, adjust the respective adjustment parts shown below.

1．ミラーテープ(CQ-012C)を装着し，COPY↔STOPをくり返して，テープがテープガイドに正常にホールドされているかどうかを確認する。
2．COPY状態にして，もしテープがテープガイドに当ってカールするようであれば，テープがねじれないように（一直線に見えるように）下記の個所を調整する。



Note:
Also pay attention to head verticality and flapping, and execute visual confirmation.
For this, turn the front and back height adjustment screws and the vertical adjustment screw each for about the same amount.

ヘッドの垂直，あおりにも注意し，目視にて確認する。
このため，前後の高さ調整ねじ，垂直調整ねじとも同程度ずつ回すようにする。

Head Azimuth Adjustment (CCP-310)

PLAYBACK HEAD

Setting:

Output . . . . . CN855 PIN 4, 5 (CONNECTOR BOARD)

Procedure:

1. Execute playback (COPY mode) of the test tape (P-4-A100).
2. Adjust the screw so that the output become a maximum.

   Note: As peaks also occur before and after the correct vertical position, adjust to the maximum peak.

1．テストテープ(P-4-A100)を再生(COPY状態)します。

2．出力が最大になるよう垂直調整ねじで調整します。

注）正確な垂直状態の前後にもピークが出るので，最大のピークに合せる。

RECORD HEAD

Procedure:

1. Connect each channel of the Record Head serialy and the output to the VTVM with MYLAR CAPACITOR (0.0022 μF).

   Note: Connect the ⊖ GND side of the VTVM to chassis.
2. Remove the CNP3 from the Audio (M) board and the CNP1 from the Audio (S) board.

   (For the output level is −60 dB, the output can not be read in the connecting situation as it is masked by bias signal.)
3. Playback the test tape (P-4-A063) and find the peak point with the Head azimuth adjustment screw. (Pre adjustment)
4. Playback the test tape (P-4-A100), find the peak point, and apply rocking agent to the Head azimuth adjustment screw.

   Note: As peaks occur before and after the correct Head azimuth adjustment, adjust to the maximum peak.

1．録音ヘッドの各チャンネルを図のように接続し，VTVMの端子にマイラーコンデンサ(0.0022μF) を接続します。

注）VTVMの⊖GND側はシャーシへ接続する。

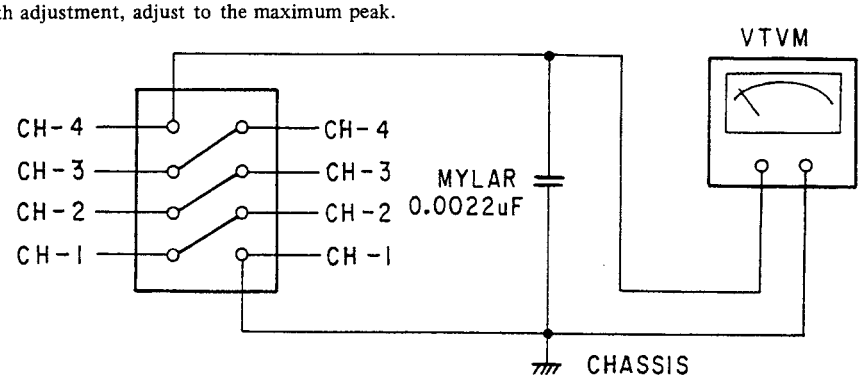
2．オーディオ基板の CNP3(Audio(M))，CNP1(Audio(S)) をはずします。

(出力レベルが−60dB程度のため，接続した状態では，バイアス信号でマスクされて出力を読むことができない。)

3．テストテープ(P-4-A063)を再生し垂直調整ネジでピーク点をさがす。(仮調整)

4．テストテープ(P-4-A100) を再生しピーク点をさがして垂直調整ねじをネジロックで固定する。

注）正確な垂直状態の前後にもピークが出るので最大ピークに合せる。

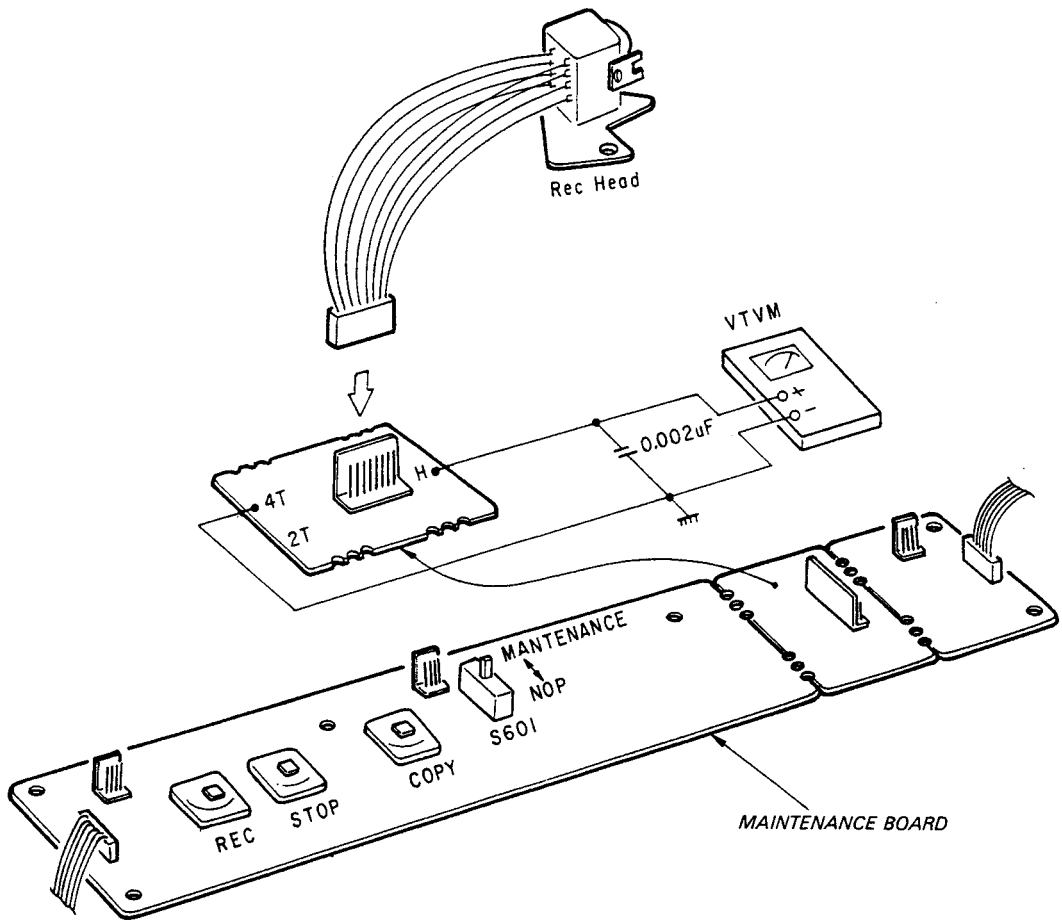


Head Azimuth Adjustment (CCP-314)

Procedure:

1. Connect the connector of Record Head to HEAD AZIMUTH board that is attached with MAINTENANCE board.
2. Connect H terminal of HEAD AZIMUTH board to ⊕ side of VTVM and 4T terminal of HEAD AZIMUTH board to ⊖ side of VTVM with MYLAR CAPACITOR (0.0022 μF).
   Note: Connect the ⊖ GND side of VTVM to chassis.
3. Disconnect the CNP1 on the Audio (S) board.
4. Execute playback of the test tape (P-4-A063) and find the peak point. (Pre adjustment)
5. Execute playback of the test tape (P-4-A100), find the peak point and set the screw by rocking agent.
   Note: As peak also occur before and after the true vertical position, adjust to the maximum peak.

1．メンテナンス基板に付属されているヘッドアジマス基板に録音ヘッドのコネクタを接続します。
2．ヘッドアジマス基板のH端子をVTVMの⊕側に，4T端子をVTVMの⊖側に接続します。VTVMの端子にマイラーコンデンサ0.0022μFを図のように入れる。
注）VTVMの⊖GND側はシャーシへ接続する。
3．オーディオ基板のCNP1(Audio(S))をはずします。
4．テストテープ(P-4-A063)を再生しピーク点をさがします。(仮調整)
5．テストテープ(P-4-A100)を再生しピーク点をさがし垂直調整ねじをネジロックで固定します。
注）正確な垂直位置の前後にもピークが出るので最大のピークに合せる。



5-4. ELECTRICAL ADJUSTMENT

Frequency Adjustment

Equipment required 10 mH Micro-Inductor
Frequency Counter

Procedure:

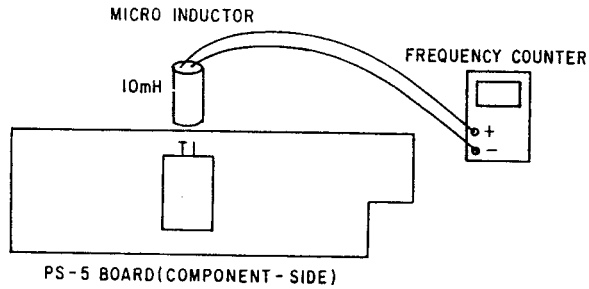
1. Connect the Micro-Inductor with Frequency Counter. Put the Micro-Inductor close to the T1 (Transformer).
2. Adjust RV51 so that frequnecy falls within specification.

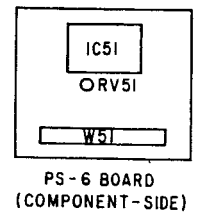
準 備

10mHマイクロインダクタ
周波数カウンタ

1．マイクロインダクタを周波数カウンタに接続し，PS-5基板のT1(トランス)に接近させる。
2．周波数が規格に入いるようRV51で調整する。

Specifications:
120.0 ±0.5 kHz





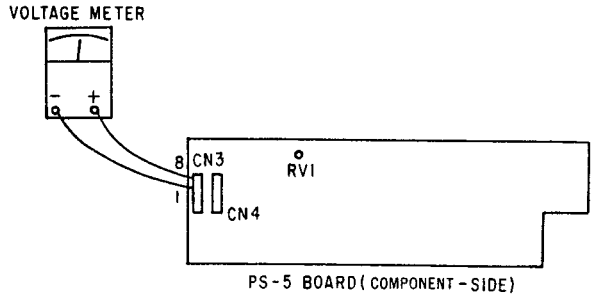
Voltage Adjustment

Procedure:

1. Connect the ⊖ lead-wire of Voltage Meter with No. 6 terminal of CN3 on PS-5 board and the ⊕ lead-wire of Voltage Meter with No. 8 terminal of CN3 on PS-5 board.
2. Adjust RV1 so that the DC voltage falls within the specification.

1．PS-5基板のCN36番端子に電圧計の⊖リード線を，8番端子に⊕リード線を接続する。
2．DC電圧が規格に入いるようにRV1で調整する。

Specifications:
−15.0 ±0.1 V

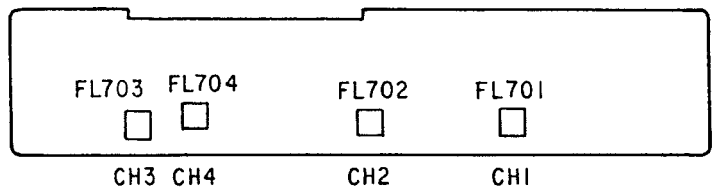


Filter on the VOLUME Board Adjustment
(For get rid of switching noise at Power circuit.)

1. Connect the oscilloscope and VTVM to line out of CCP-310, 314.
2. Power switch of CCP-310 is ON. (Mech is STOP mode.) Adjust the filter on the VOLUME board so that the voltage of VTVM is minimum.

(SW電源のスイッチングノイズ除去用)

1．CCP-310, 314のラインアウトにVTVM, オシロスコープを接続する。
2．CCP-310の電源スイッチをON状態（メカはSTOP状態）にしてVTVMの電圧が最少になるようVOLUME基板のフィルターを調整する。



Volume board
Component-side

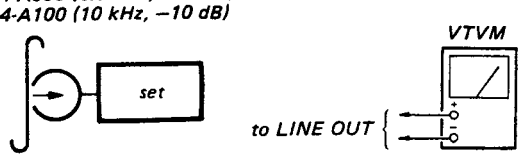
CH1 → FL701
CH2 → FL702
CH3 → FL703
CH4 → FL704

Playback Level and Playback Frequency Response Adjustment (only CCP-310)

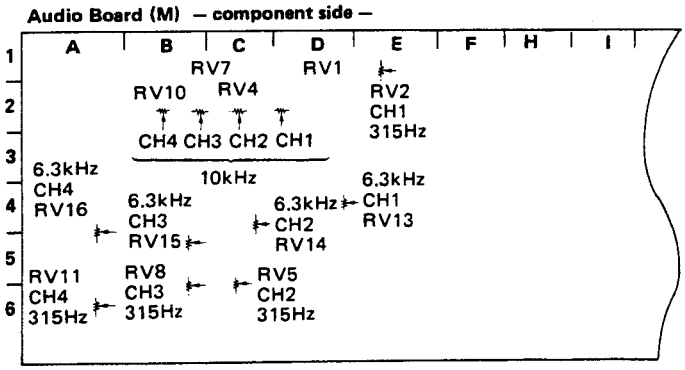
1. Connect the VTVM to Line out of the set.
2. Execute playback of the test tape (P-4-L300). (315 Hz)
3. Adjust RV2, 5, 8 and 11 on the Audio (M) board so that the output falls within the specification.
4. Execute playback of the test tape (P-4-A063). (6.3 kHz)
5. Adjust RV13, 14, 15 and 16 on the Audio (M) board so that the output falls within the specification.
6. Execute playback of the test tape (P-4-A100-2). (10 kHz)
7. Adjust RV1, 4, 7 and 10 on the Audio (M) board so that the output falls within the specification.

1．VTVMをセットのラインアウトに接続する。
2．テストテープ(P-4-L300)を再生する。(315Hz)
3．出力が規格に入るようAudio(M)基板上のRV2, 5, 8, 11を調整する。
4．テストテープ(P-4-A063)を再生する。(6.3kHz)
5．出力が規格に入るようAudio(M)基板上のRV13, 14, 15, 16を調整する。
6．テストテープ(P-4-A100-2)を再生する。(10kHz)
7．出力が規格に入るようAudio(M)基板上のRV1, 4, 7, 10を調整する。

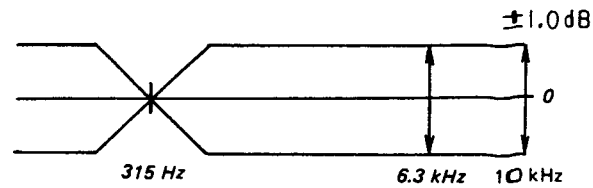
P-4-L300 (315 Hz, 0 dB)
P-4-A063 (6.3 kHz, −10 dB)
P-4-A100 (10 kHz, −10 dB)



Audio Board (M) — component side —



Specifications:



Reference output level 0 dB ±1 dB (315 Hz)

Bias Frequency Adjustment

Setting:

Output . . . . . Record Head Terminal
Mode . . . . . COPY
SIDE SELECT SW . . . . . A + B

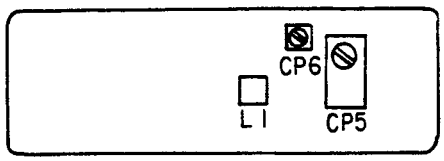
Procedure:

Adjust CP so that the frequency becomes 480 kHz. 周波数が480kHzになるようCPを調整する。

Specifications:

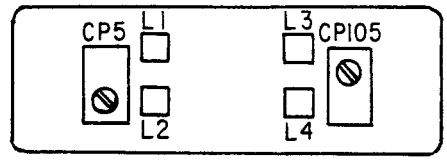
480 kHz ±5%

Audio Board (M) — component side —



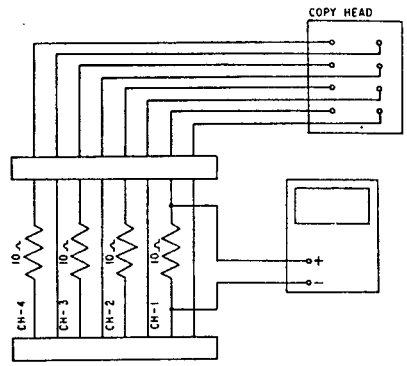
CCP-310 COPY1

Audio Board (S) — component Side —



CCP-310 COPY2
CCP-314 COPY1, 3

CCP-310 COPY3
CCP-314 COPY2, 4



Bias Trap Adjustment

Setting:

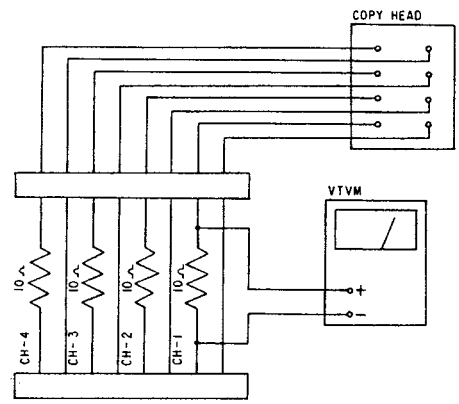
Mode . . . . . COPY
SIDE SELECT SW . . . . . A + B

Adjust CP so that the output becomes a maximum. 出力が最大になるようにCPを調整します。

CCP-310 COPY1
- Audio Board (M)
  - CH-1 Trap CP1
  - CH-2 Trap CP2
  - CH-3 Trap CP3
  - CH-4 Trap CP4

CCP-310, COPY2 or CCP-314 COPY1 and COPY3.
- Audio Board (S)
  - CH-1 Trap CP1
  - CH-2 Trap CP2
  - CH-3 Trap CP3
  - CH-4 Trap CP4

CCP-310 COPY3 or CCP-314 COPY2 and COPY3.
- Audio Board (S)
  - CH-1 Trap CP101
  - CH-2 Trap CP102
  - CH-3 Trap CP103
  - CH-4 Trap CP104



Note:

- The bias frequency should be adjusted before this adjustment.
- この調整の前に，バイアス周波数が調整されていること。

Bias Adjustment

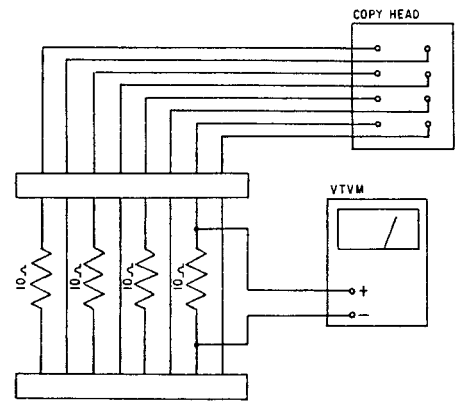
Setting:

Mode . . . . . COPY
SIDE SELECT SW . . . . . A + B

1. Adjust the bias current of every channel by RV on the Bias 1 – 4 Board as the following.
   CH-1, 4 . . . . . 2.0 mA
   CH-2, 3 . . . . . 2.2 mA
   CCP-310 COPY1
   Audio Board (M)
   CH-1 . . . . . Bias 4 Board RV1 (Audio Board (M) CT1)
   CH-2 . . . . . Bias 3 Board RV1
   CH-3 . . . . . Bias 3 Board RV2
   CH-4 . . . . . Bias 4 Board RV1 (Audio Board (M) CT4)
   CCP-310 COPY2, CCP-314 COPY1 and COPY3
   CH-1 . . . . . Bias 1 Board RV1
   CH-2 . . . . . Bias 1 Board RV2
   CH-3 . . . . . Bias 1 Board RV3
   CH-4 . . . . . Bias 1 Board RV4
   CCP-310 COPY3, CCP-314 COPY2 and COPY4
   CH-1 . . . . . Bias 2 Board RV5
   CH-2 . . . . . Bias 2 Board RV6
   CH-3 . . . . . Bias 2 Board RV7
   CH-4 . . . . . Bias 2 Board RV8
2. Disconnect the CNP2 (CCP-310), CNP3 (CCP-314) on the Audio (S) Board.
3. Apply the signal (2.5 kHz, 0 dB) to the pin and record the signal on a blank tape.
4. Playback the recorded portion with a standard playback unit.
5. Measure the harmonic distortion.
   Specifications within 2%
6. Unless an output falls within the specification add the Bias current 0.2 mA and measure the harmonic distortion again.

Note:
- Clean and demagnetize the Head.

1．バイアス1～4を次のように調整することにより，各チャンネルのバイアス電流を調整します。



2．Audio(S)基板のCNP2(CCP-310)とCNP3(CCP-314)の接続をはずします。
3．2.5kHz，0dBの信号をそのピンより入力し，生テープに録音します。
4．録音したテープを標準再生機で再生します。
5．歪率を測定します。
   規格　2％以下
6．規格に入らない場合はバイアス電流を0.2mA増し，再度歪率を測定します。

●ヘッド消磁，クリーニングを行なうこと。

REC EQ Adjustment

Setting:

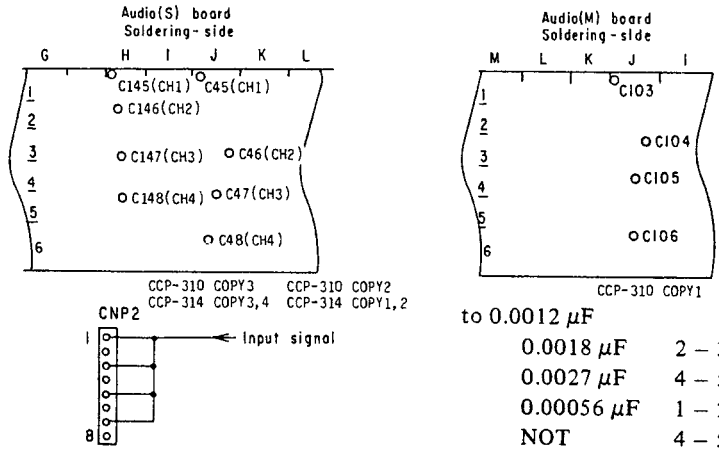
Mode . . . . . COPY
SIDE SELECT SW . . . . . A + B

1. Disconnect the CNP2 on the Audio (S) board.
2. Apply the signal (2.5 kHz, 80 kHz −20 dB) to the 1, 3, 5 and 7 pin of CNP2 and record this signal.
3. Connect the VTVM to Line out of a standard playback unit and playback the recorded portion with a standard playback unit.
4. Change the C103 – 106 on the Audio (M) board and the C45 – 48, C145 – 149 on the Audio (S) board so that the 10 kHz (80 kHz) output level is $^{+2}_{-4}$ dB per 315 Hz output level.

Note: These capacitors are mounted on the soldering side.

1．Audio(S)基板上のCNP2をはずす。
2．2.5kHz，80kHz −20dBの信号をCNP2の1，3，5，7ピンに入力し録音します。
3．VTVMを標準再生機のラインアウトへ接続し，録音したテープを標準再生機で再生する。
4．10kHzの出力レベルが315Hz(2.5kHz)に対して$^{+2}_{-4}$dBになるようAudio(M)基板上のC103～106を又Audio(S)基板上のC45～48，C145～148を交換して調整します。

注）このコンデンサは裏付部品です。



to 0.0012 μF
0.0018 μF　2 – 3 dB up
0.0027 μF　4 – 5 dB up
0.00056 μF　1 – 2 dB down
NOT　4 – 5 dB down

Record Level Adjustment and Record Frequency Response Confirmation

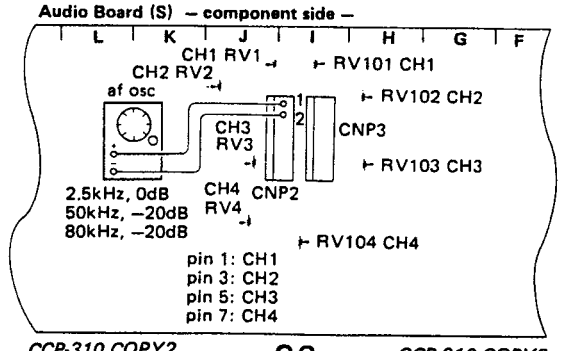
Setting:

SIDE SELECT SW . . . . . A + B

Procedure:

1. Disconnect the CNP2 (CCP-310) and CNP3 (CCP-314) on the Audio (S) board.
2. Apply the signal (2.5 kHz, 0 dB) to the 1, 3, 5 and 7 pin and record the signal on the blank tape.
3. Connect the VTVM to Line out of a standard playback unit and playback the recorded-portion with a standard playback unit.
4. Unless 315 Hz output falls within the specification, make adjustment by turning RV1 – 4, RV101 – 104 on the Audio (S) board and RV3, 6, 9, and 12 on the Audio (M) board.
5. Confirm Frequency Response and Distortion.

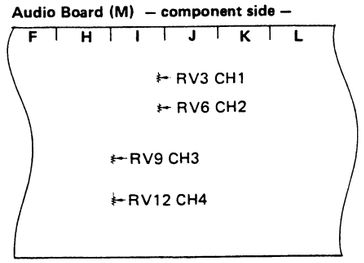
1．Audio(S)基板上のCNP2(CCP-310)，CNP3(CCP-314)をはずす。
2．1，3，5，7ピンより信号(2.5kHz，0dB)を入力し未収録テープに録音する。
3．VTVMを標準再生機のラインアウトに接続し，録音したテープを標準再生機で再生する。
4．315Hzの出力が規格に入らない場合は，Audio(S)基板上のRV1～4，RV101～104そしてAudio(M)基板上のRV3，6，9，12を回して調整する。
5．再度，周波数特性，歪率を測定する。



CCP-310 COPY2
CCP-314 COPY1, 3

CCP-310 COPY3
CCP-314 COPY2, 4

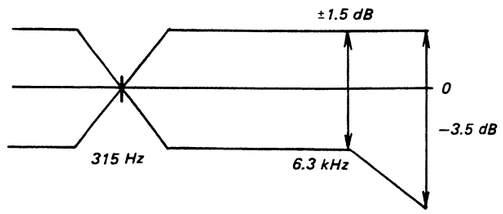
Audio Board (M) — component side —



CCP-310 COPY1

Note:
1. Turning RV clockwise raises the output level.
2. Unless an output falls within the specification, readjust the bias.

Specifications:



Reference output level 0 dB ±1 dB (315 Hz)

1．RVは時計方向に回すと出力レベルが上る。
2．出力が規格に入らない場合は，バイアス調整からやり直す。

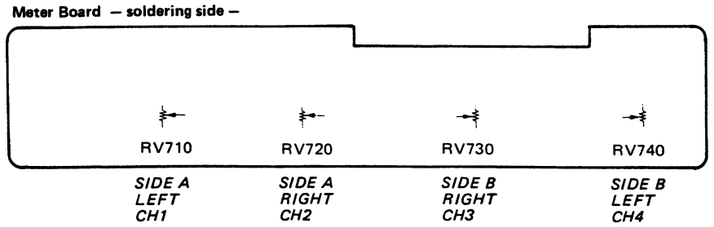
Level Meter Adjustment

Setting:
SIDE SELECT SW ..... A + B

1. Set the REC LEVEL control at 0 dB position.
2. Excute playback (COPY mode) of the test tape (P-4-L300) at ORIGINAL unit.
3. Adjust RV so that the LED of level meter lights at 0 dB.

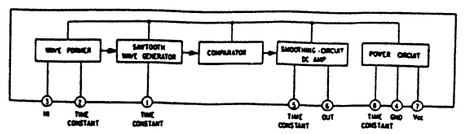
1．REC LEVELつまみを0dBの位置にする。
2．ORIGINAL機にテストテープ(P-4-L300)を入れ再生(COPY状態)する。
3．レベルメーターの0dBのLEDまでが点灯するようにRVを調整する。

Meter Board — soldering side —

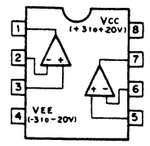


SECTION 6
SEMICONDUCTORS

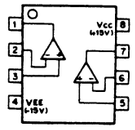
CX065B (MITSUBISHI)
SERVO AMPLIFIER



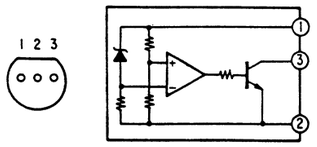
NE5532P (TI)
LOW NOISE OPERATIONAL AMPLIFIER
— TOP VIEW —



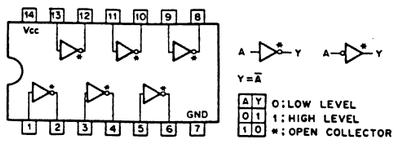
NJM2043D-D (JRC)
OPERATIONAL AMPLIFIER
— TOP VIEW —



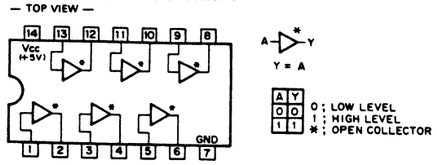
PST520 (MITSUMI)
4.5V SYSTEM RESET IC
— BOTTOM VIEW —



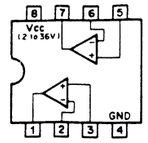
SN74LS05N (TI)
TTL INVERTER WITH OPEN-COLLECTOR
— TOP VIEW —



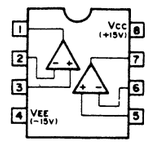
SN7407N (TI)
TTL BUFFER/DRIVER WITH OPEN-COLLECTOR
— TOP VIEW —



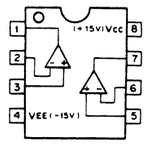
μPC393C (NEC)
VOLTAGE COMPARATOR
— TOP VIEW —



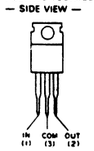
μPC4556C (NEC)
OPERATIONAL AMPLIFIER
(WIDE BAND, DECOMPENSATED)
— TOP VIEW —



μPC4558C (NEC)
OPERATIONAL AMPLIFIER
— TOP VIEW —

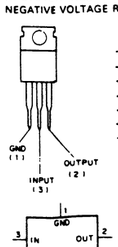


μPC7805H (NEC)
μPC7815H (NEC)
POSITIVE VOLTAGE REGULATOR (1A)
— SIDE VIEW —



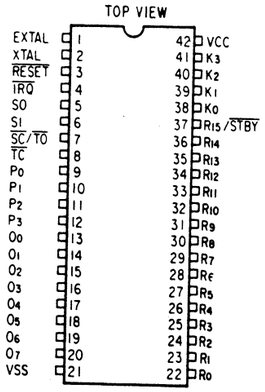
OUTPUT VOLTAGE	
5V	05
6V	06
8V	08
9V	09
12V	12
15V	15
18V	18
20V	20
24V	24

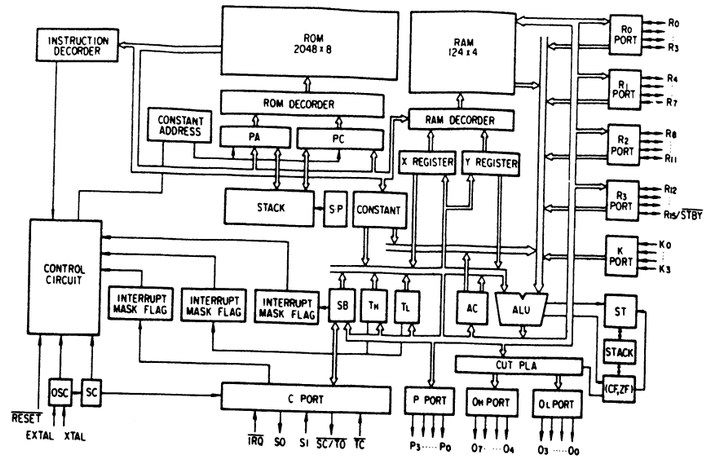
μPC7915H (NEC)
NEGATIVE VOLTAGE REGULATOR (1A)



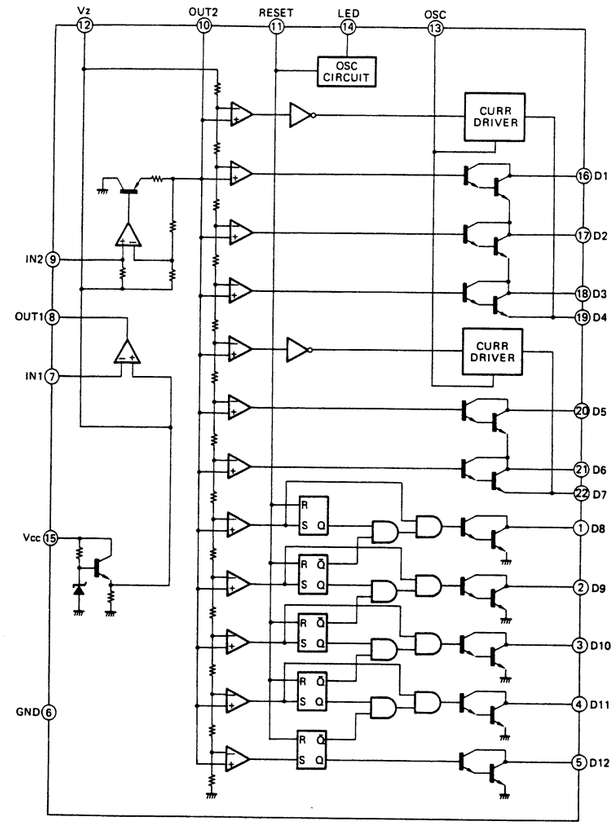
− 5V	μA7905UC	FS7905	μPC7905H
− 6V	μA7906UC		
− 8V	μA7908UC		μPC7908H
−12V	μA7912UC		μPC7912H
−15V	μA7915UC		μPC7915H
−18V	μA7918UC		μPC7918H
−24V	μA7924UC		μPC7924H

MB8851 (FUJITSU)
1 CHIP 4 BIT MICROCOMPUTER





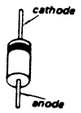
LB1412 (SANYO)
LED 12 POINT LEVEL METER DRIVER



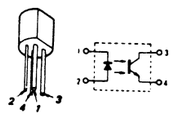
BX1221

2SC1623-L7
DTA124XK

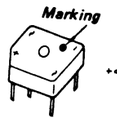
1SS119
1SS106



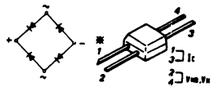
NJL5141E



S2VB20



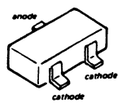
THS102A



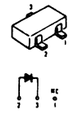
2SA952
2SC3070

CX065B

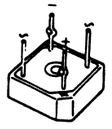
1S2835



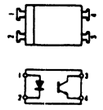
RD24M-B1



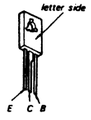
S5VB20



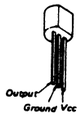
TLP521-1



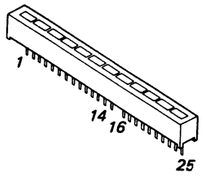
2SD894



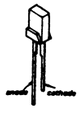
PST520



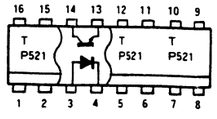
GL112F13



SEL1121R
SEL1321G

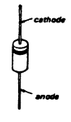


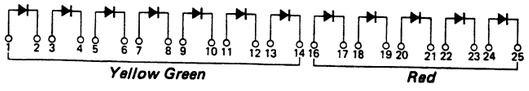
TLP521-4



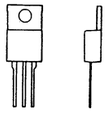
2SB808
2SC2603
2SD1012
DTA114ES
DTA124ES
DTC114ES

11ES2
ERA15

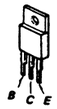




2SK792

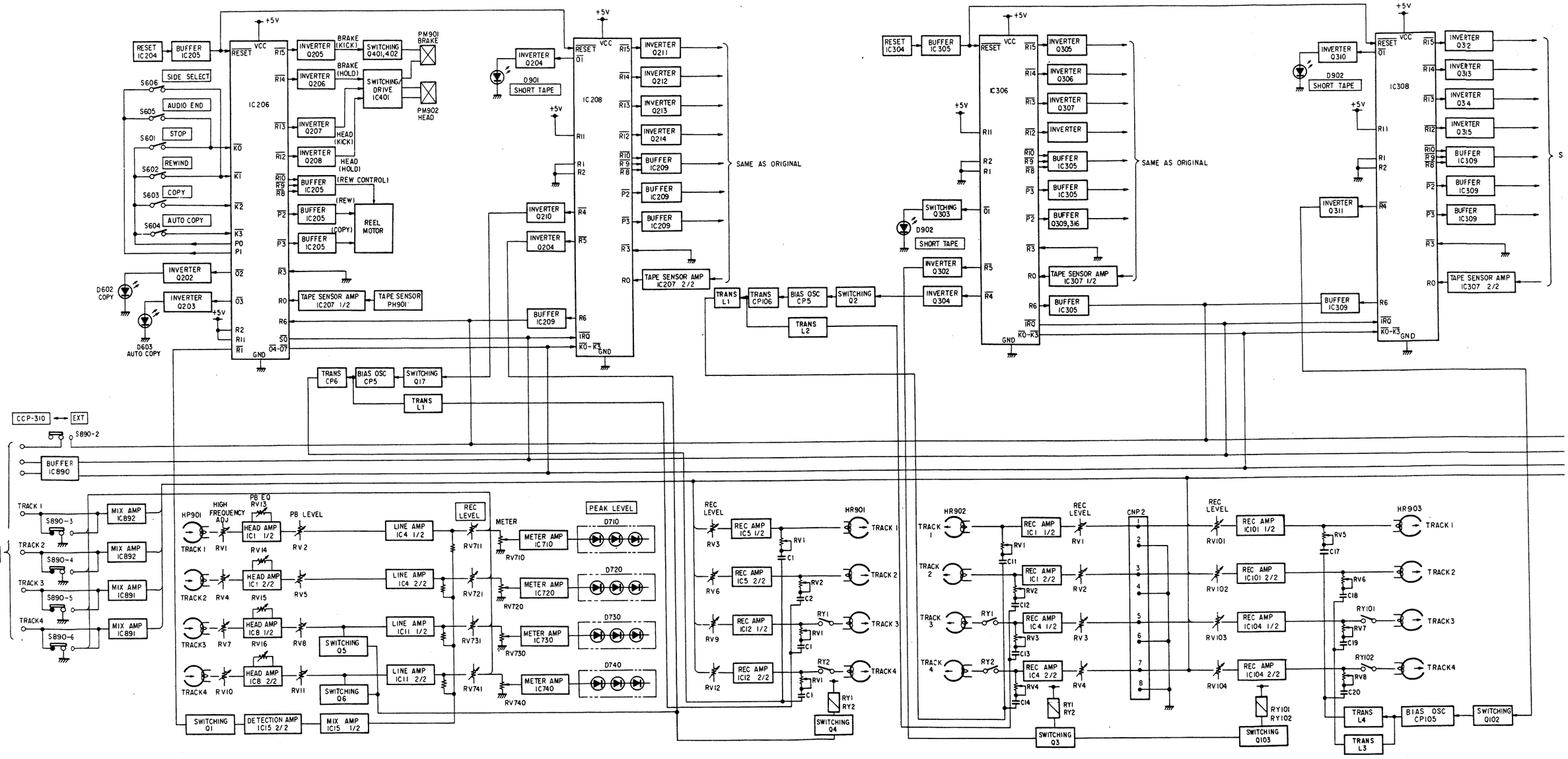


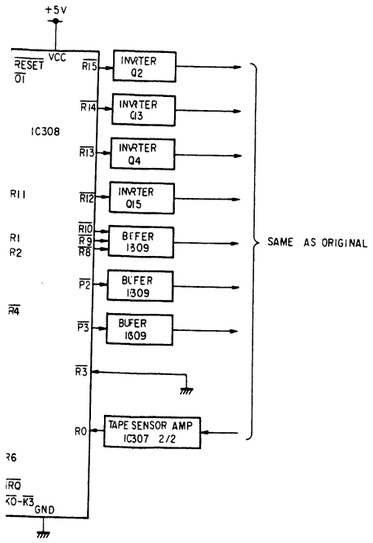
2SB834
2SD880

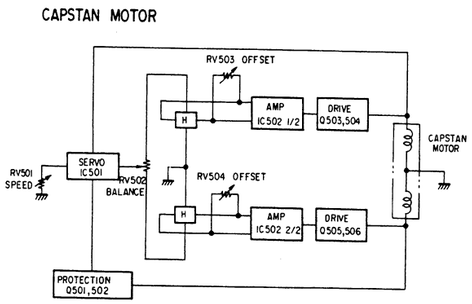


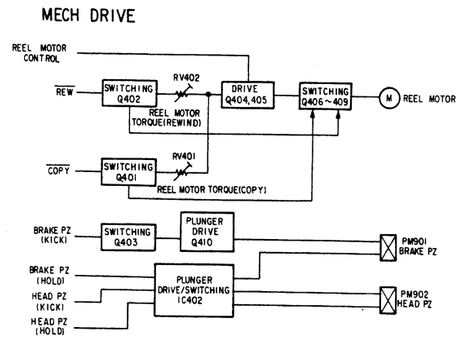
SECTION 7
CCP-310 DIAGRAMS AND PARTS LIST

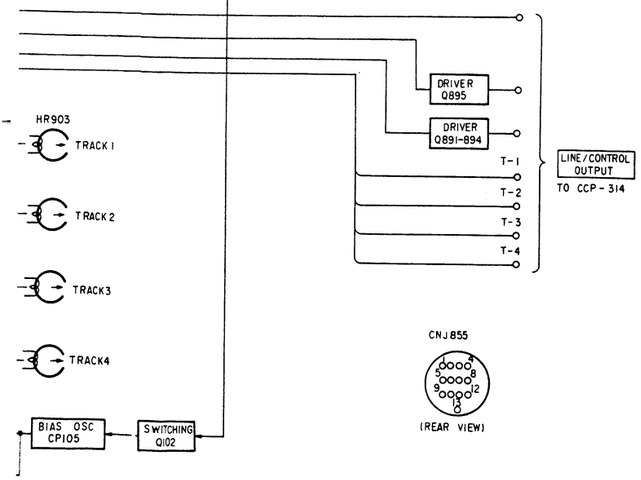
7-1. BLOCK DIAGRAM



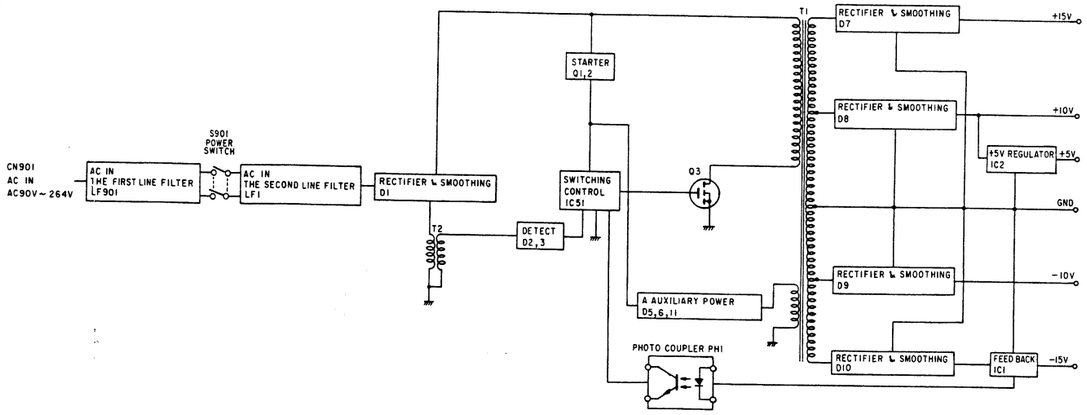


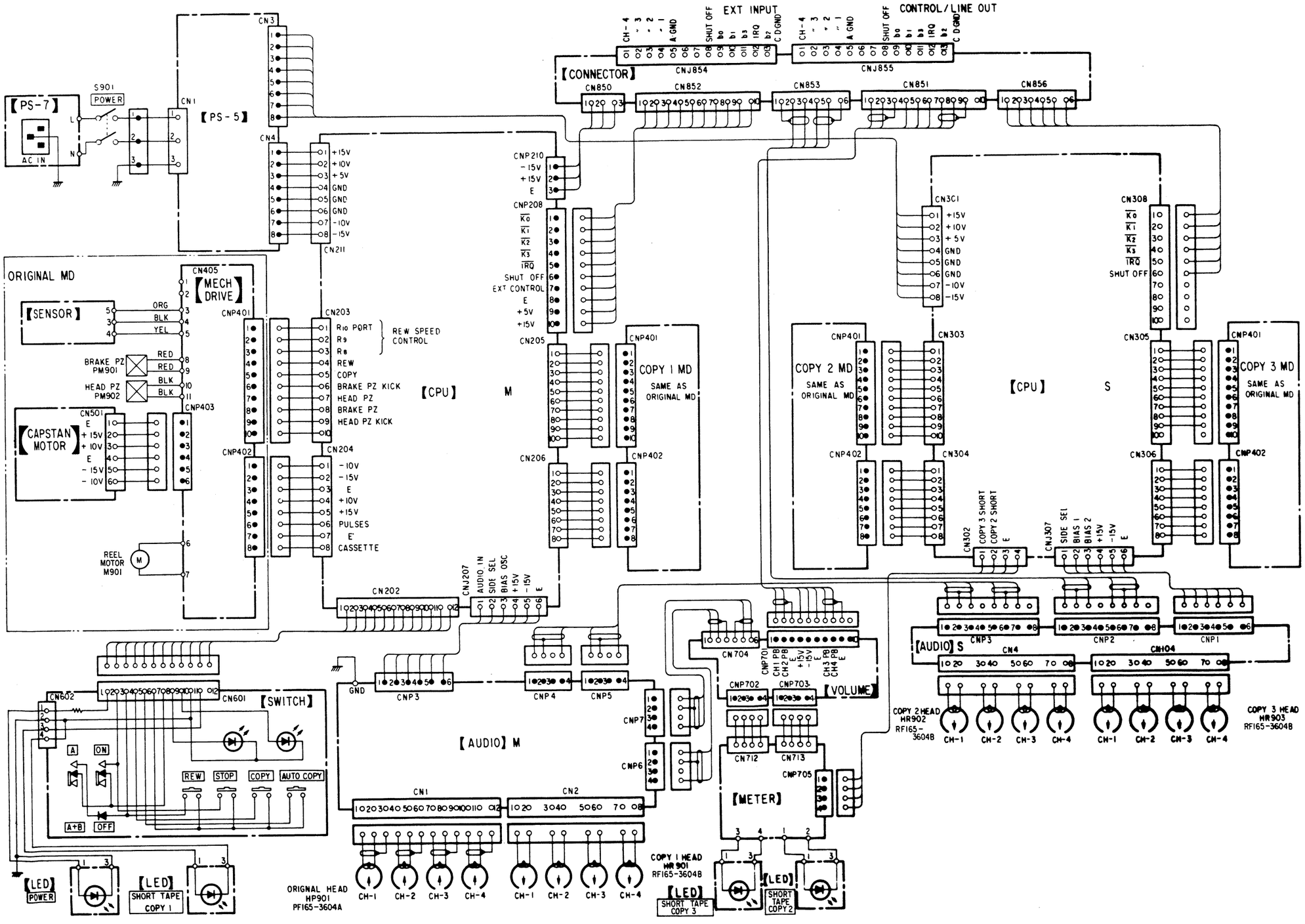




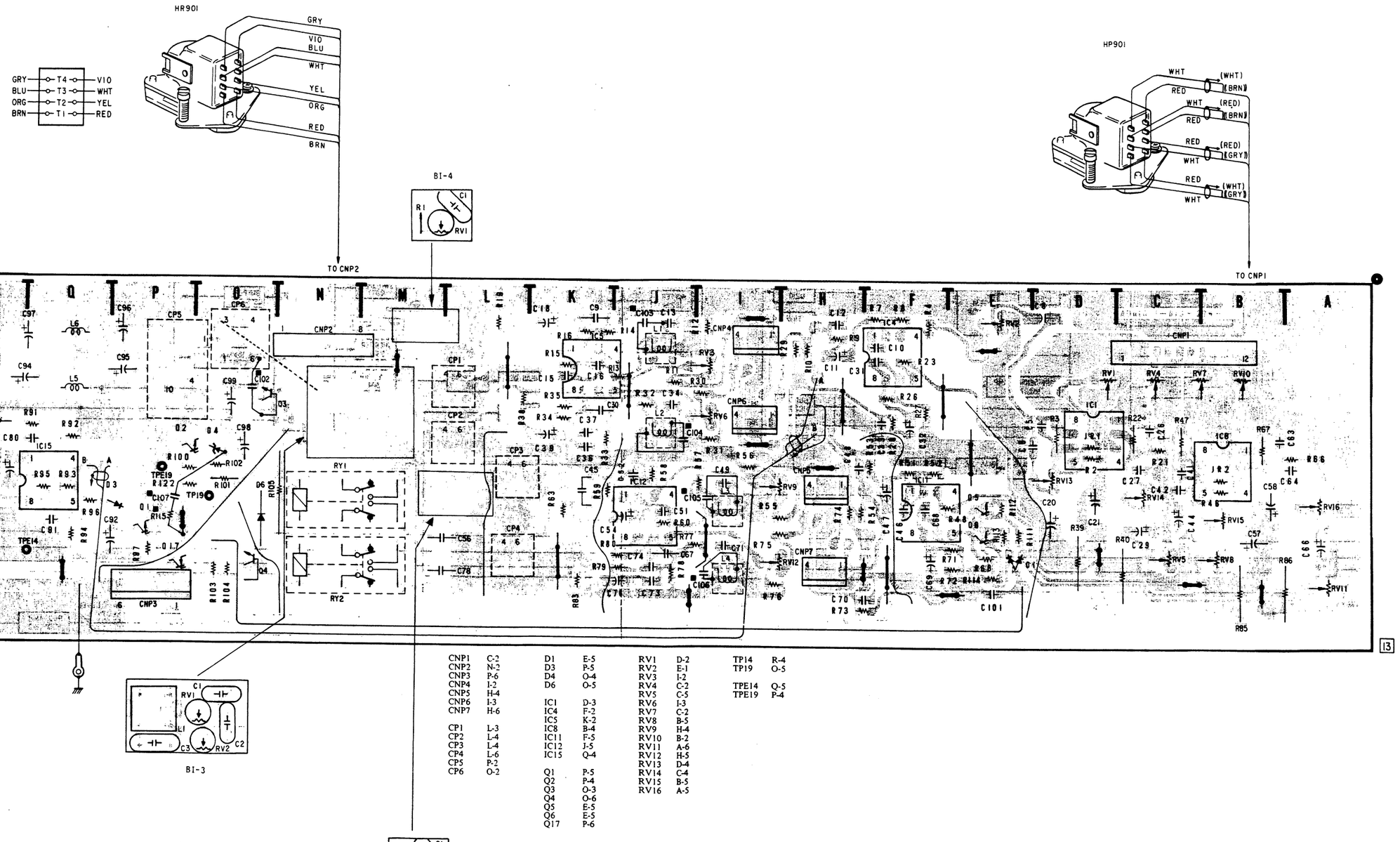


SWITCHING POWER




EXT INPUT
CONTROL/LINE OUT
【CONNECTOR】
CNJ854
CNJ855
CN850
CN852
CN853
CN851
CN856
【PS-7】
【PS-5】
S901
POWER
AC IN
CN1
CN3
CN4
CN211
ORIGINAL MD
CN405
【MECH DRIVE】
【SENSOR】
CNP401
CN203
REW SPEED CONTROL
【CPU】 M
CN204
【CAPSTAN MOTOR】
CN501
CNP403
CNP402
REEL MOTOR M901
CN202
CNJ207
【AUDIO】 M
CNP208
CNP210
CN205
CN206
COPY 1 MD
SAME AS ORIGINAL MD
CN3C1
CN303
CN304
COPY 2 MD
SAME AS ORIGINAL MD
【CPU】 S
CN308
CN305
CN306
COPY 3 MD
SAME AS ORIGINAL MD
CN302
CNJ307
【AUDIO】 S
CNP3
CNP2
CNP1
CN4
CN104
CN602
CN601
【SWITCH】
【LED】 POWER
【LED】 SHORT TAPE COPY 1
ORIGNAL HEAD HP901 PF165-3604A
CH-1 CH-2 CH-3 CH-4
CNP3 CNP4 CNP5
CNP7 CNP6
CN1 CN2
CNP704 CNP701 CNP702 CNP703
【VOLUME】
CN712 CN713
CNP705
【METER】
COPY 1 HEAD HR901 RF165-3604B
【LED】 SHORT TAPE COPY 3
【LED】 SHORT TAPE COPY 2
COPY 2 HEAD HR902 RF165-3604B
COPY 3 HEAD HR903 RF165-3604B

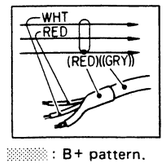
7-3. AUDIO BOARD (M) – *Soldering Side* –



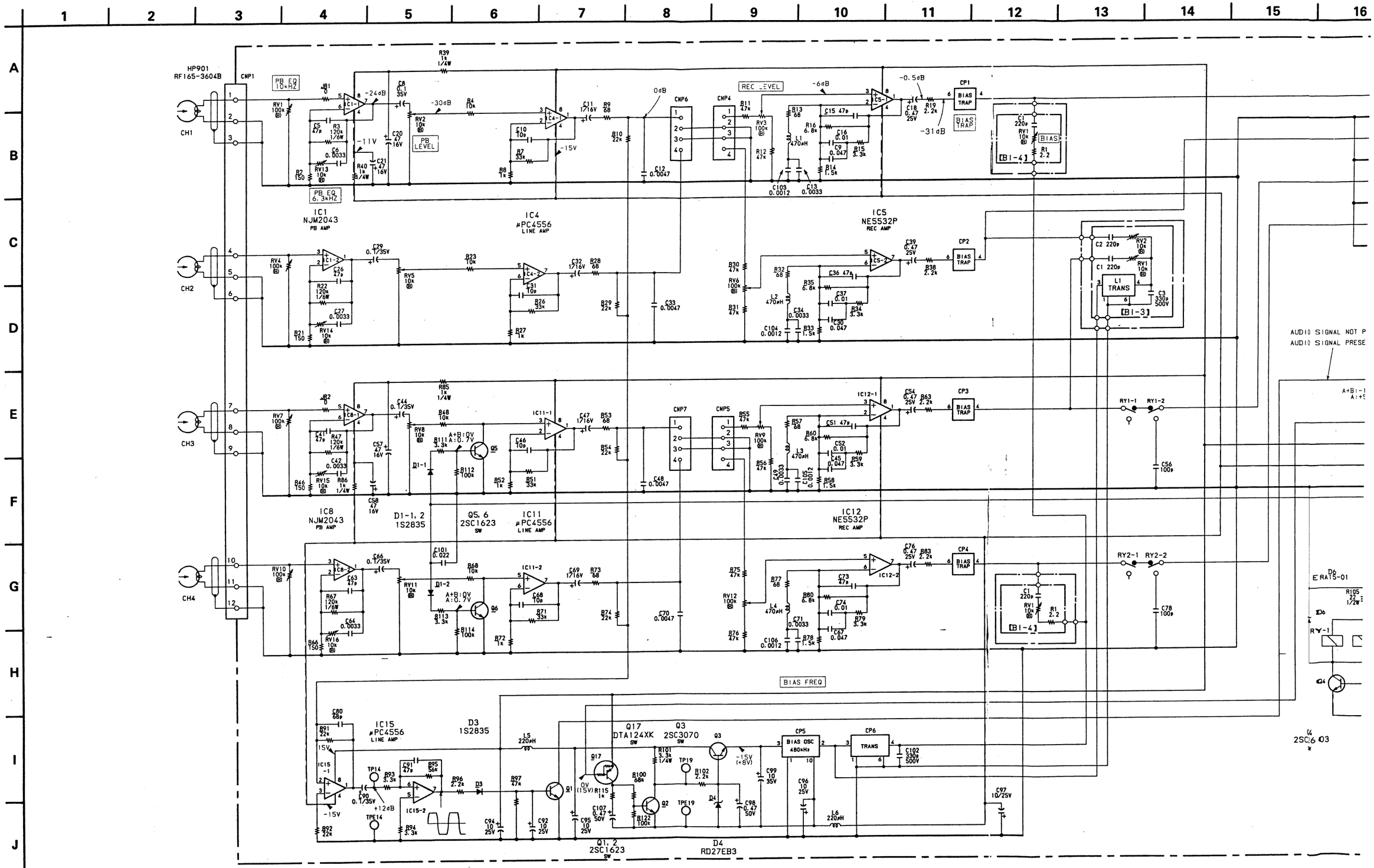
CNP1	C-2	D1	E-5	RV1	D-2	TP14	R-4
CNP2	N-2	D3	P-5	RV2	E-1	TP19	O-5
CNP3	P-6	D4	O-4	RV3	I-2		
CNP4	I-2	D6	O-5	RV4	C-2	TPE14	Q-5
CNP5	H-4			RV5	C-5	TPE19	P-4
CNP6	I-3	IC1	D-3	RV6	I-3		
CNP7	H-6	IC4	F-2	RV7	C-2		
		IC5	K-2	RV8	B-5		
CP1	L-3	IC8	B-4	RV9	H-4		
CP2	L-4	IC11	F-5	RV10	B-2		
CP3	L-4	IC12	J-5	RV11	A-6		
CP4	L-6	IC15	Q-4	RV12	H-5		
CP5	P-2			RV13	D-4		
CP6	O-2	Q1	P-5	RV14	C-4		
		Q2	P-4	RV15	B-5		
		Q3	O-3	RV16	A-5		
		Q4	O-6				
		Q5	E-5				
		Q6	E-5				
		Q17	P-6				

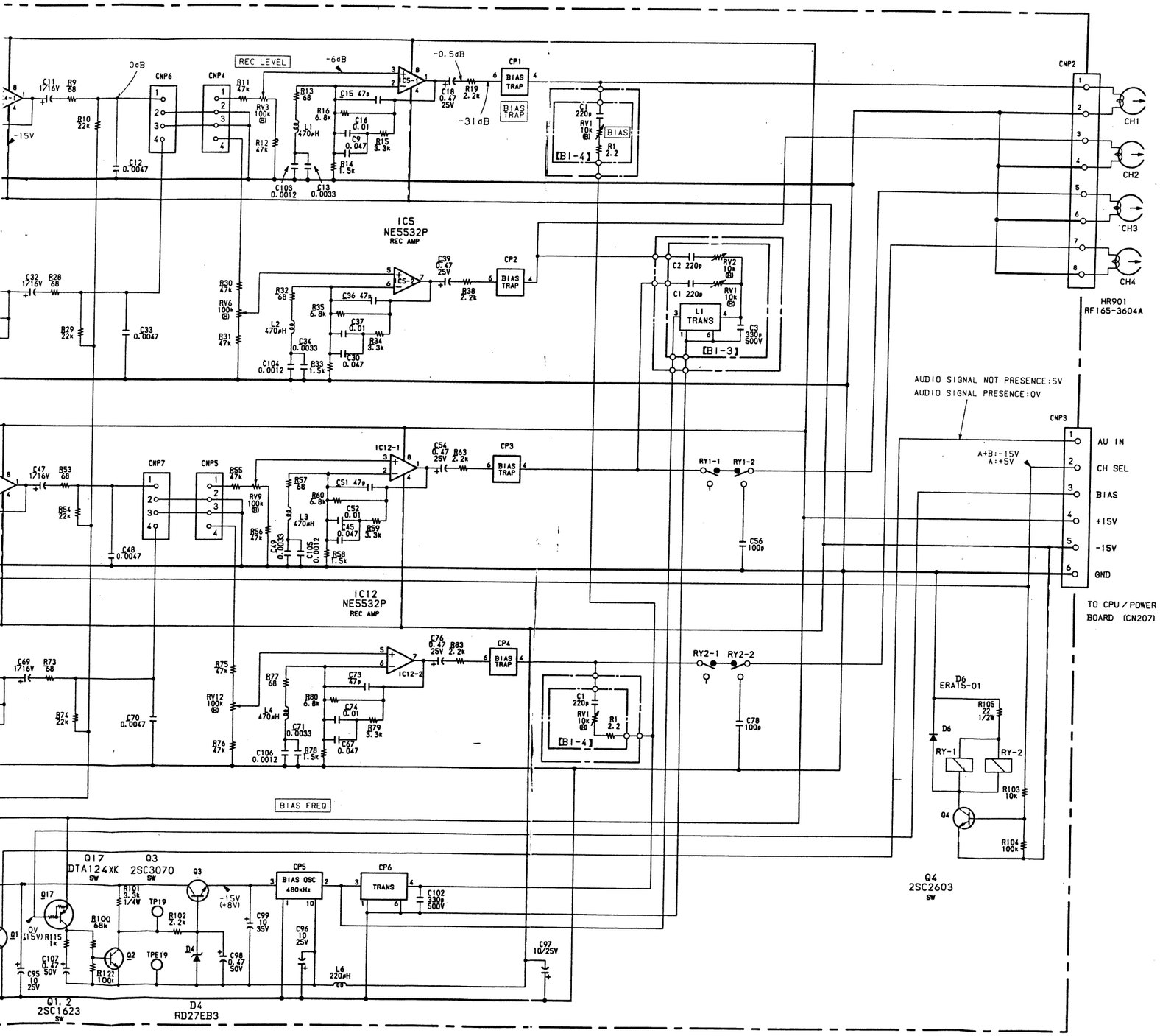
Note:

- Color code or sleeving over the end of the jacket.



- ▒▒▒ : B+ pattern.


HP901
RF165-3604B
CNP1
CH1
CH2
CH3
CH4
PB EQ 10kHZ
PB EQ 6.3kHZ
PB LEVEL
REC LEVEL
BIAS TRAP
BIAS
BIAS FREQ
IC1 NJM2043 PB AMP
IC4 μPC4556 LINE AMP
IC5 NE5532P REC AMP
IC8 NJM2043 PB AMP
IC11 μPC4556 LINE AMP
IC12 NE5532P REC AMP
IC15 μPC4556 LINE AMP
D1-1, 2 1S2835
Q5, 6 2SC1623 SW
D3 1S2835
Q17 DTA124XK SW
Q3 2SC3070 SW
Q1, 2 2SC1623 SW
D4 RD27EB3
BIAS OSC 480kHz
TRANS
RY1-1
RY1-2
RY2-1
RY2-2
AUDIO SIGNAL NOT P
AUDIO SIGNAL PRESE
-24dB
-30dB
0dB
-6dB
-0.5dB
-31dB
-11V
-15V
+12dB
A+B:0V A:0.7V
A+B:-1 A:+5

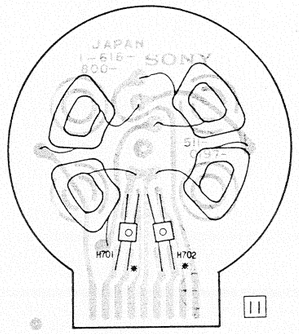


Note:

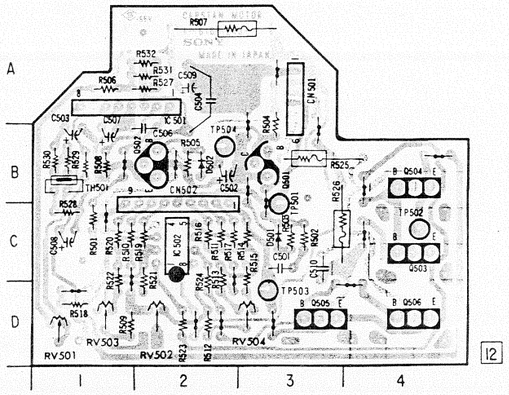
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/10 W or less unless otherwise specified.
- : fusible resistor.
- An underlined reference symbol denotes a tip component.
- : B+ bus.
- : B− bus.
- : adjustment for repair.
- Readings are taken under no-signal (detuned) conditions with a digital voltmeter (10 MΩ) is stop mode.
  ( ): COPY mode
- dB value is obtained when a playback of the test tape (P-4-L300) is performed.

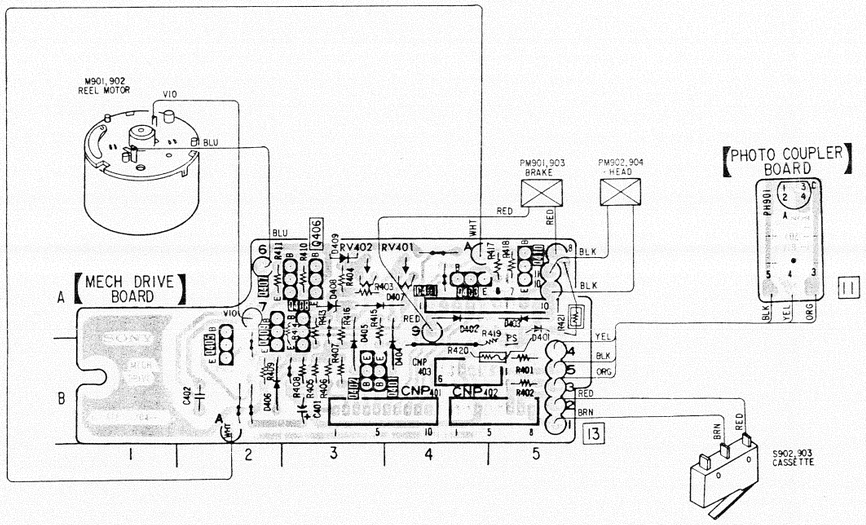
4. CPU (M), MECH-MOTOR (CAPSTAN) DRIVE, SWITCH BOARD — *Soldering Side* —

【STATOR BOARD】



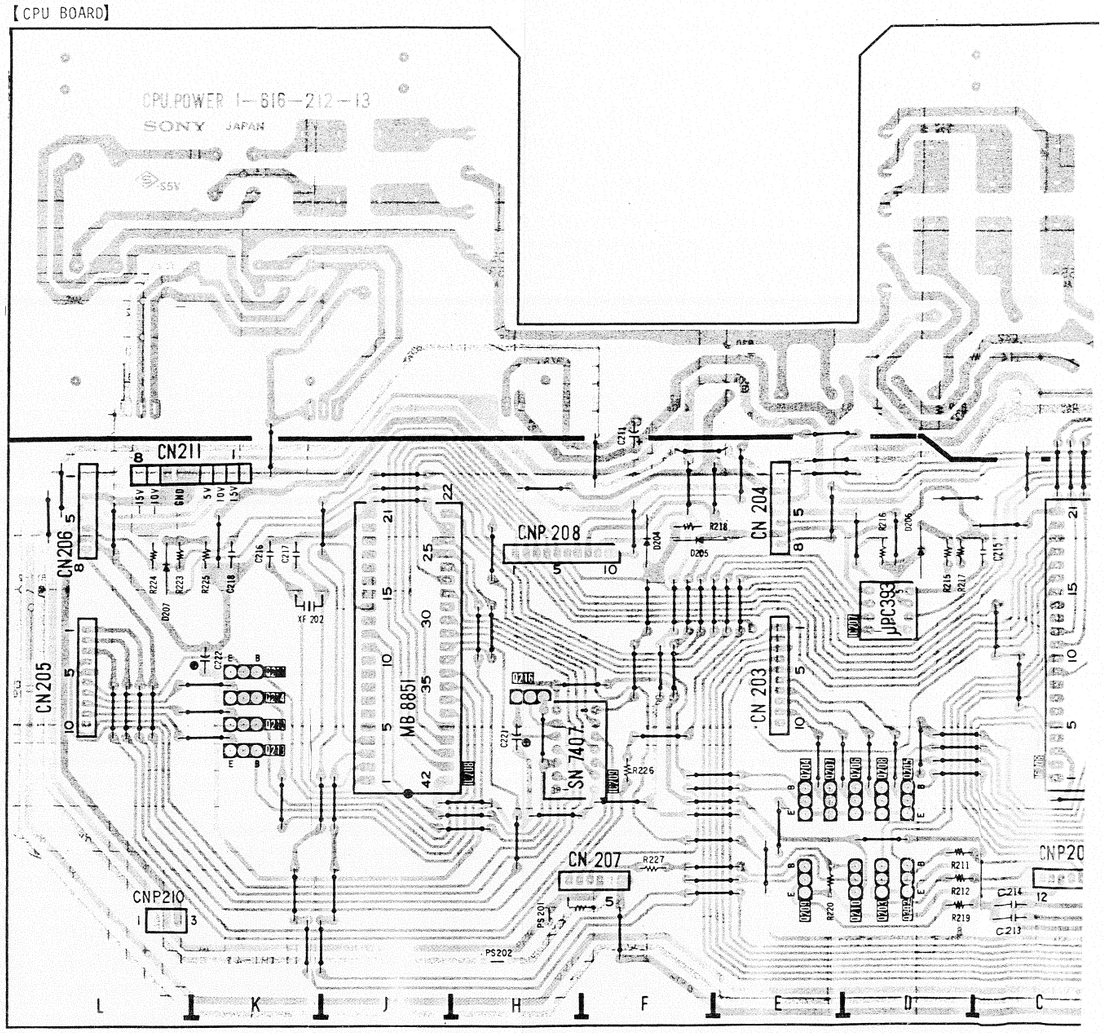
【CAPSTAN MOTOR BOARD】



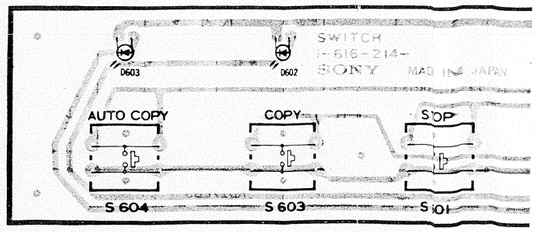


【CPU BOARD】

CN203	E-3	IC204	B-2
CN204	E-5	IC205	B-4
CN205	L-3	IC206	C-3
CN206	L-5	IC207	D-4
CN207	F-2	IC208	J-3
CN211	L-5	IC209	H-3
CNP202	C-2	Q202	D-2
CNP208	H-4	Q203	D-2
CNP210	L-2	Q204	E-2
		Q205	D-2
D204	F-4	Q207	D-2
D205	F-4	Q208	D-2
D206	D-4	Q209	E-2
D207	L-4	Q210	D-2
D208	B-5	Q211	K-3
D209	B-4	Q212	K-3
		Q213	K-3
		Q214	K-3
		Q215	A-4
		Q216	H-3
		Q217	A-4

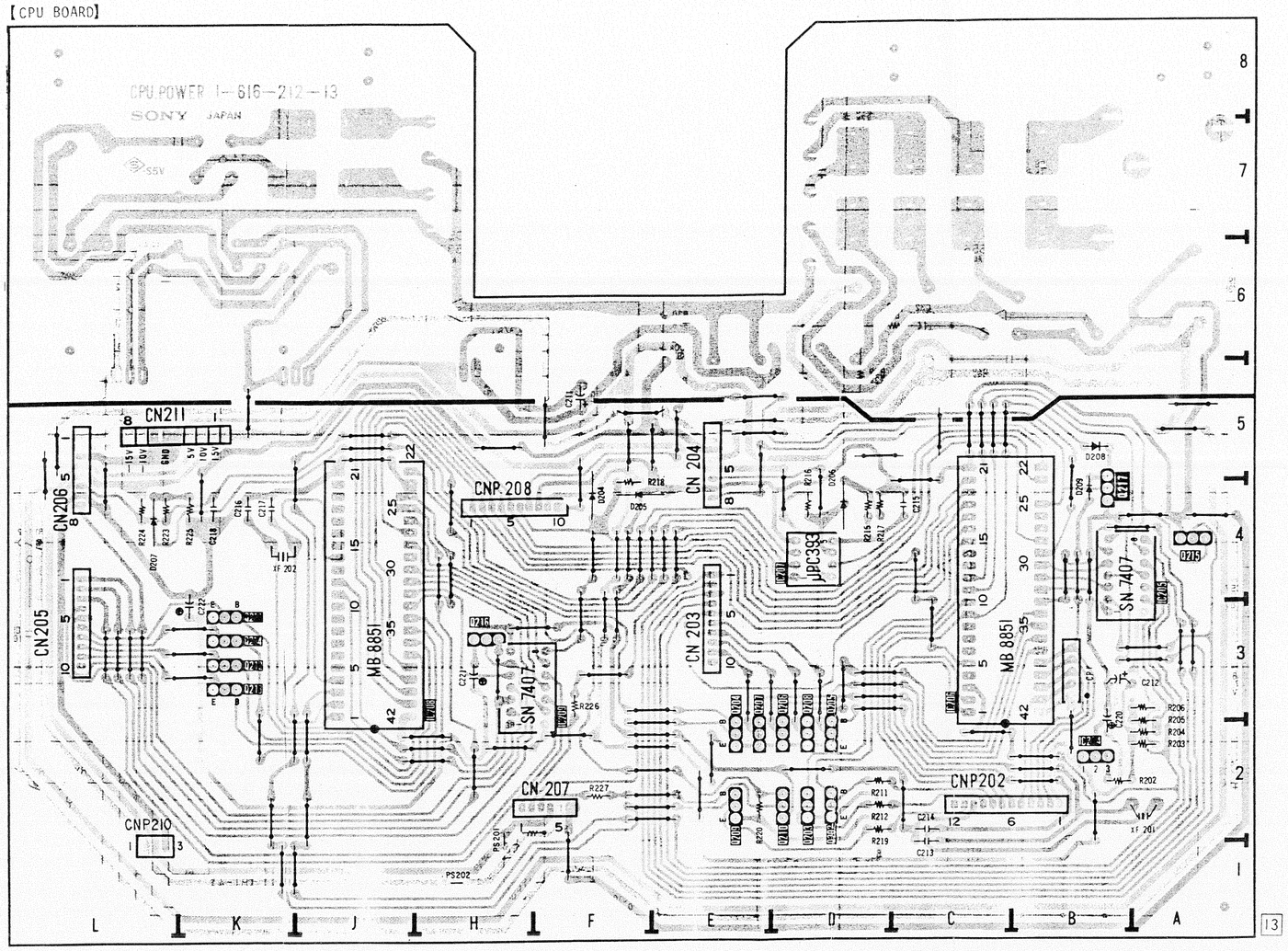


【SWITCH BOARD】

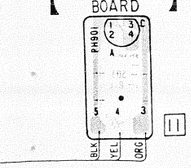


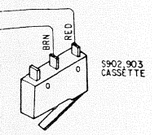
【CPU BOARD】

CN203	E-3	IC204	B-2
CN204	E-5	IC205	B-4
CN205	L-3	IC206	C-3
CN206	L-5	IC207	D-4
CN207	F-2	IC208	J-3
CN211	L-5	IC209	H-3
CNP202	C-2	Q202	D-2
CNP208	H-4	Q203	D-2
CNP210	L-2	Q204	E-2
		Q205	D-2
D204	F-4	Q207	D-2
D205	F-4	Q208	D-2
D206	D-4	Q209	E-2
D207	L-4	Q210	D-2
D208	B-5	Q211	K-3
D209	B-4	Q212	K-3
		Q213	K-3
		Q214	K-3
		Q215	A-4
		Q216	H-3
		Q217	A-4

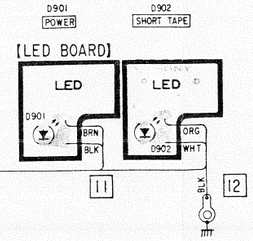


【PHOTO COUPLER BOARD】

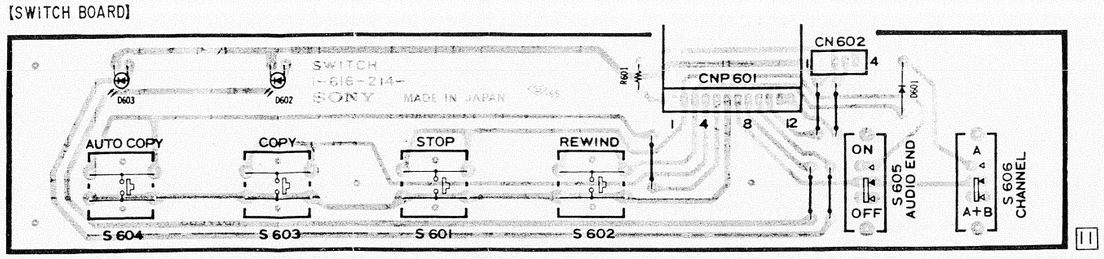




【LED BOARD】

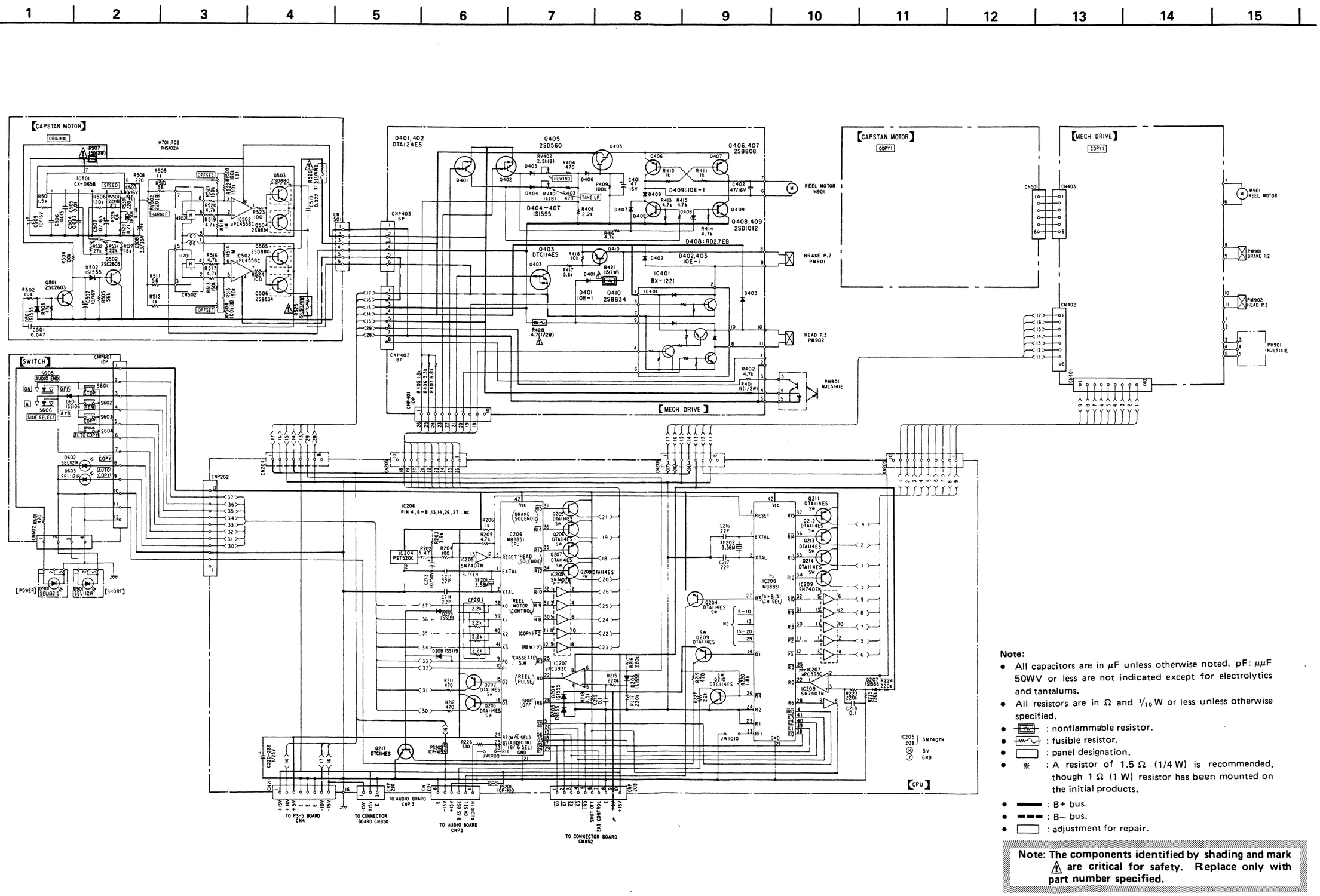


【SWITCH BOARD】



Note:

- ▒▒▒ : B+ pattern.



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/10 W or less unless otherwise specified.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- ※ : A resistor of 1.5 Ω (1/4 W) is recommended, though 1 Ω (1 W) resistor has been mounted on the initial products.
- : B+ bus.
- : B– bus.
- : adjustment for repair.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

7-5. DIGITAL CONNECTOR BOARD – *Soldering Side* –

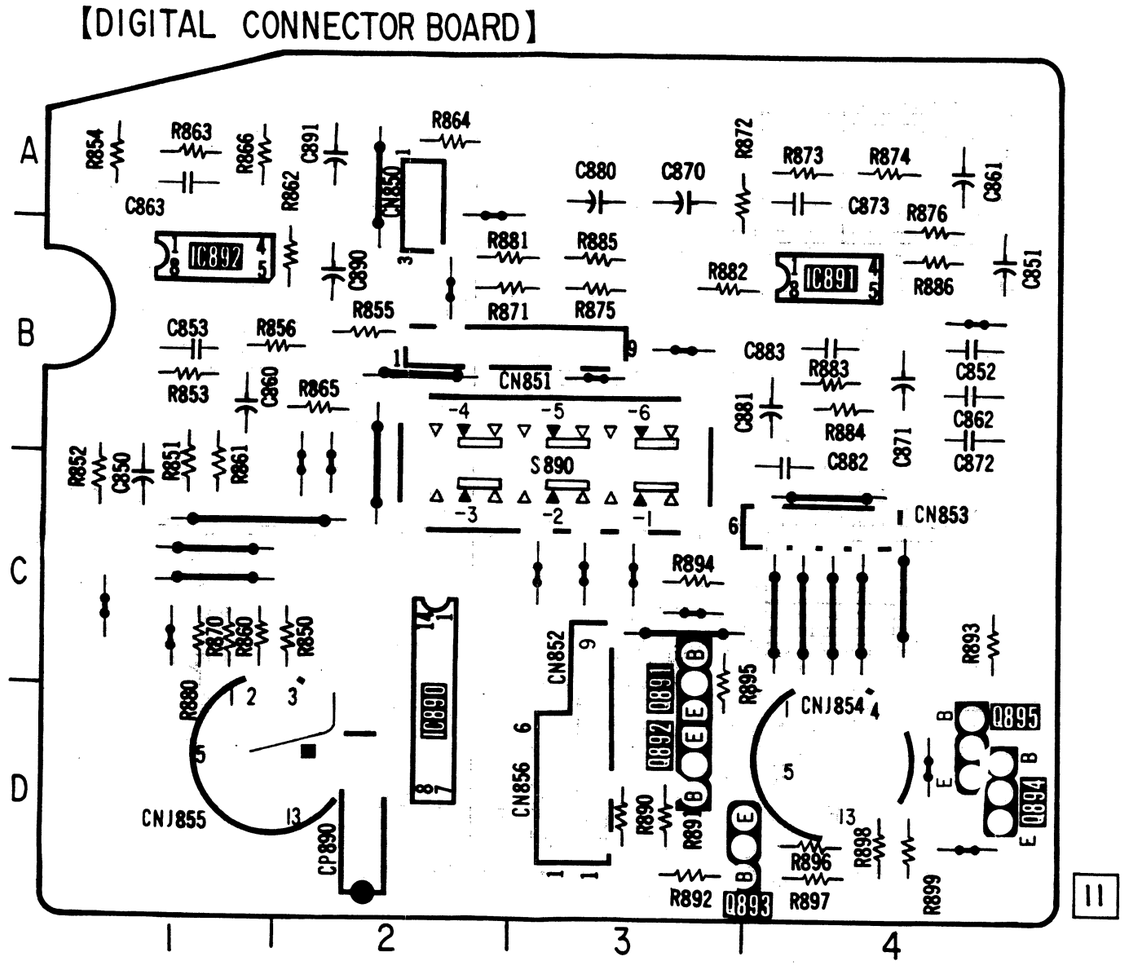
CN850 A-2
CN851 B-3
CN852 D-3
CN853 C-4
CN856 D-3

CNJ854 D-4
CNJ855 D-1

IC890 D-2
IC891 B-4
IC892 B-1

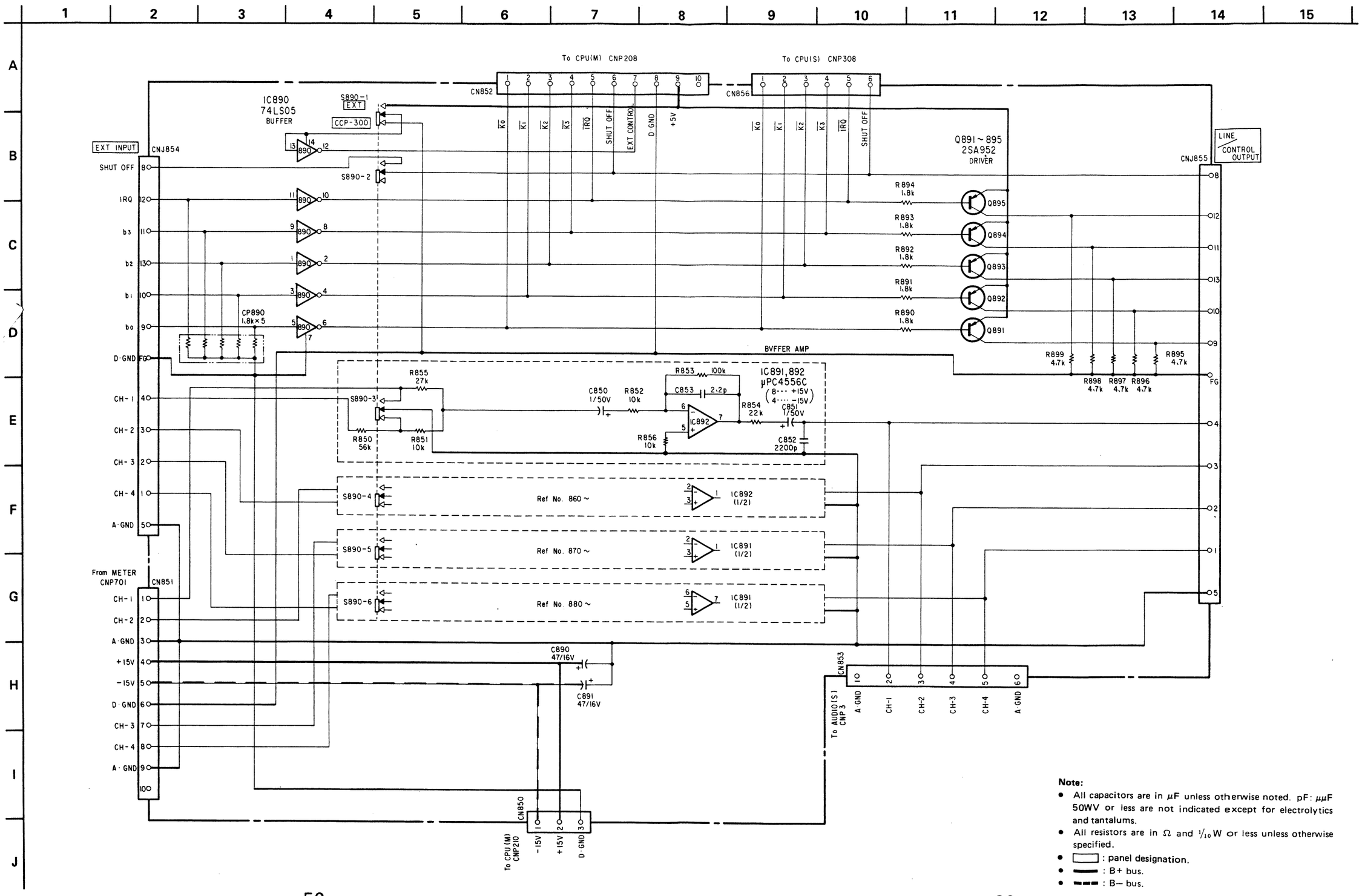
Q891 C-3
Q892 D-3
Q893 D-3
Q894 D-4
Q895 D-4

S890 C-3



Note:

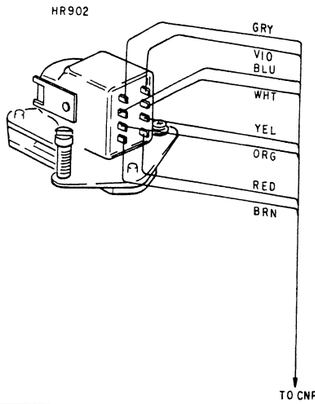
- ▒▒ : B+ pattern.
- ■ : part mounted on the soldering side.

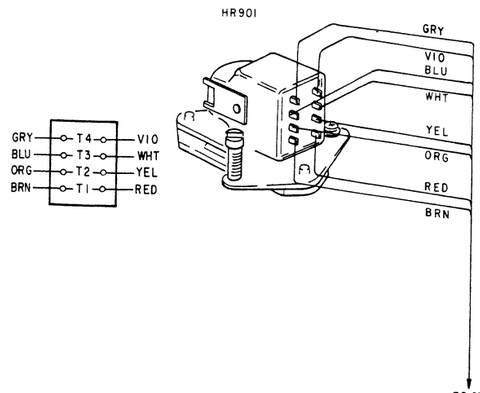


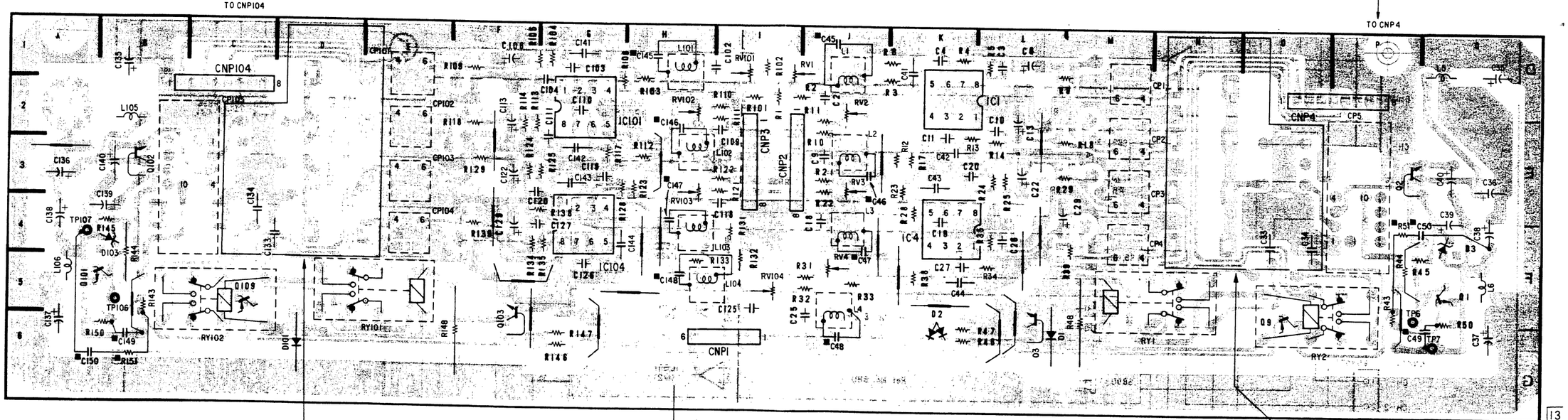
Note:

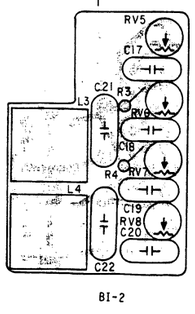
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/10W or less unless otherwise specified.
- ▭ : panel designation.
- ━━ : B+ bus.
- ▬ ▬ : B− bus.

7-6. AUDIO BOARD (S) — *Soldering Side* —

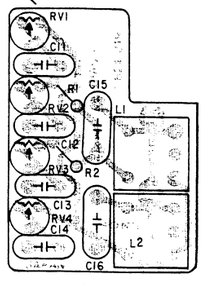








BI-2

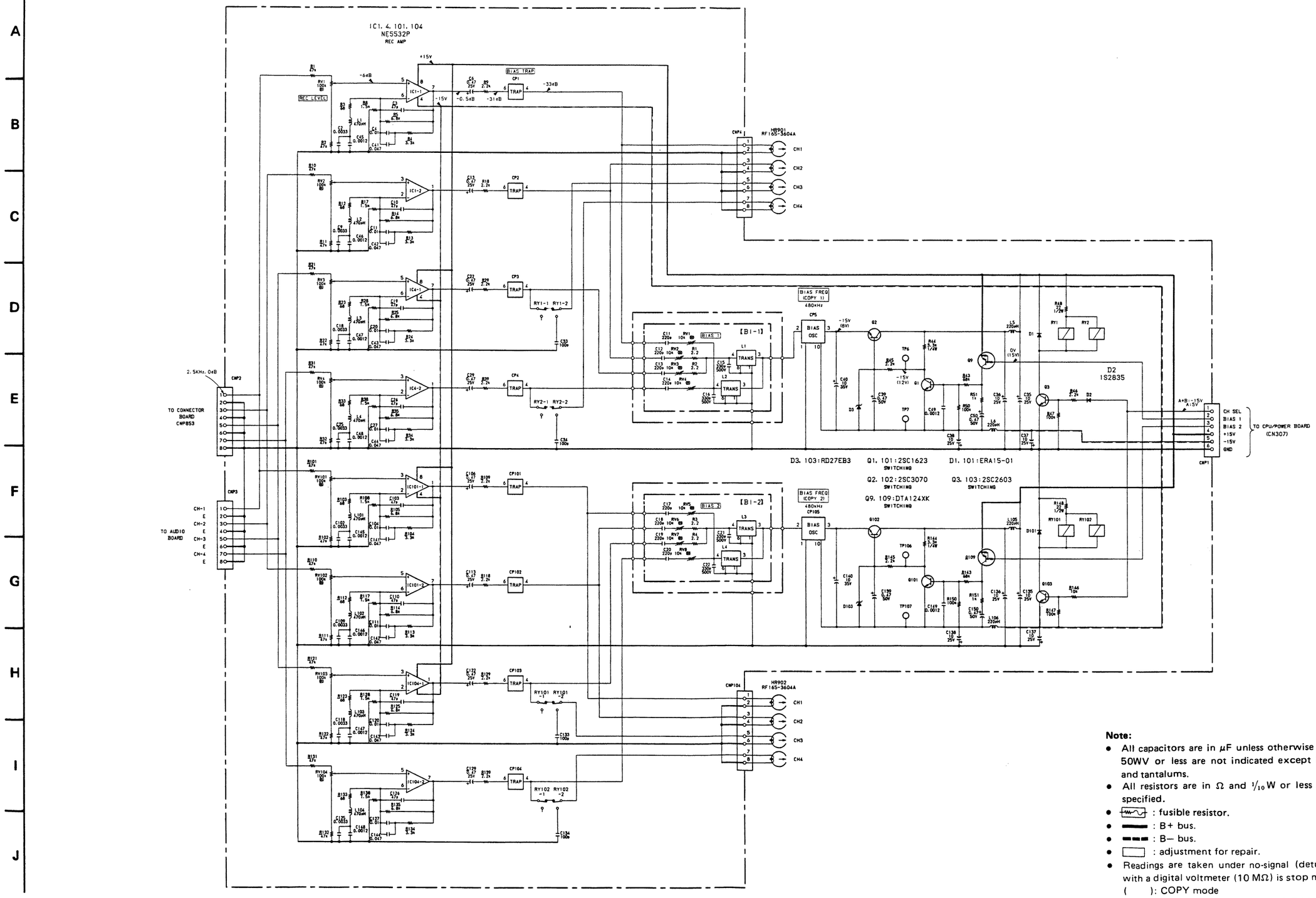


BI-1

CNP1	H-6	D1	L-5	RV1	I-1		
CNP2	I-3	D2	K-5	RV2	J-2		
CNP3	I-3	D3	Q-4	RV3	J-3		
CNP4	O-2	D101	D-6	RV4	J-4		
CNP104	C-2	D103	B-4	RV101	I-1		
				RV102	H-2		
CP1	M-2	IC1	K-2	RV103	H-3		
CP2	M-2	IC4	K-4	RV104	I-5		
CP3	M-3	IC101	G-2				
CP4	M-4	IC104	G-4	TP6	P-5		
CP5	P-3			TP7	Q-6		
CP101	E-2	Q1	Q-5	TP106	B-5		
CP102	E-2	Q2	P-3	TP107	A-4		
CP103	E-3	Q3	L-5				
CP104	E-4	Q9	O-5				
CP105	C-3	Q101	B-5				
		Q102	B-3				
		Q103	F-5				
		Q109	C-5				

Note:

- ▒▒ : B+ pattern.



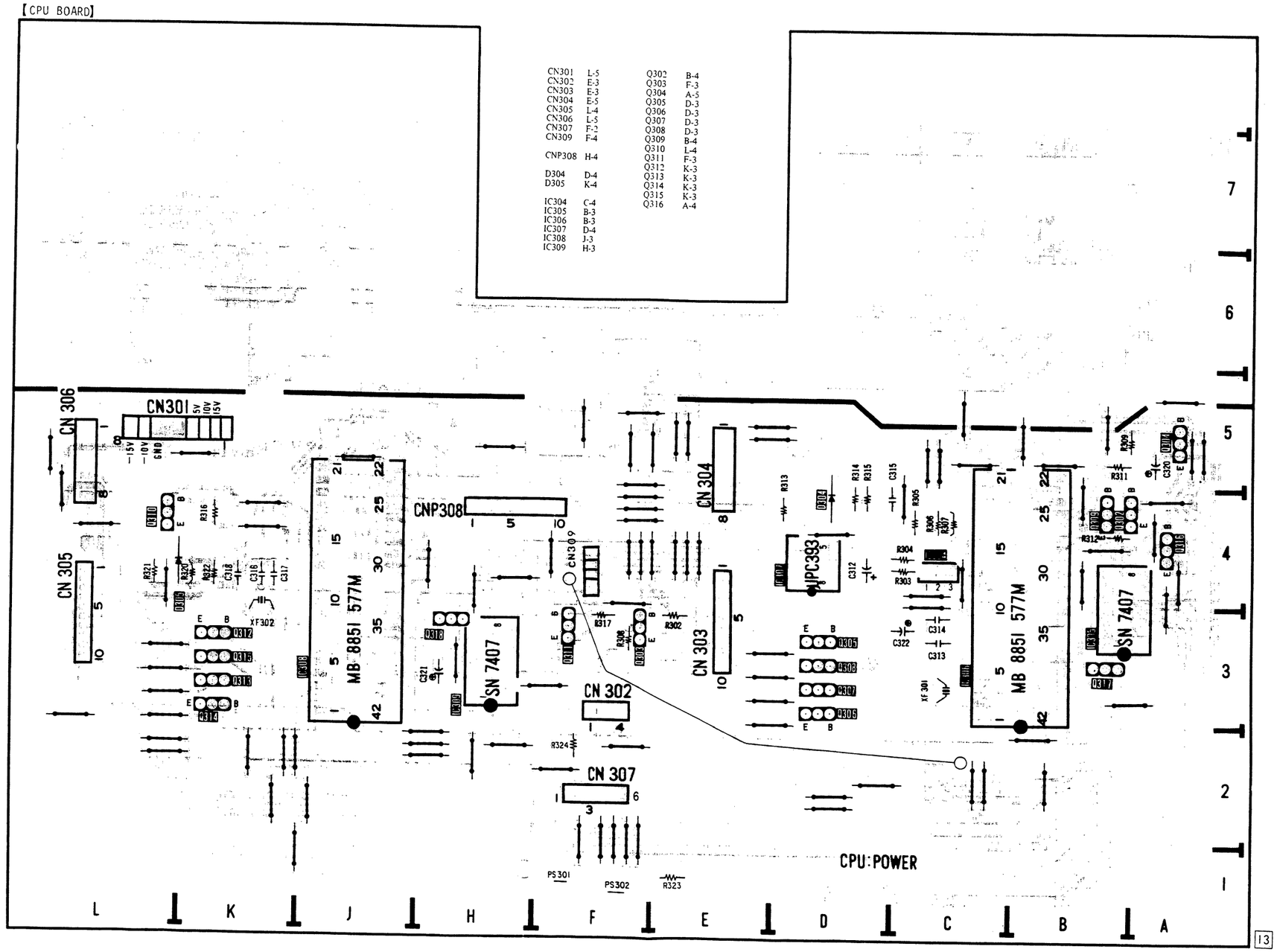
Note:

- All capacitors are in μF unless otherwise noted. pF: $\mu\mu$F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $^1/_{10}$W or less unless otherwise specified.
- ⏦ : fusible resistor.
- ▬ : B+ bus.
- ▬ ▬ : B− bus.
- ▭ : adjustment for repair.
- Readings are taken under no-signal (detuned) conditions with a digital voltmeter (10 MΩ) is stop mode.
  ( ): COPY mode
- dB value: Value with input of a 2.5 kHz, 0 dB signal to CNP2.

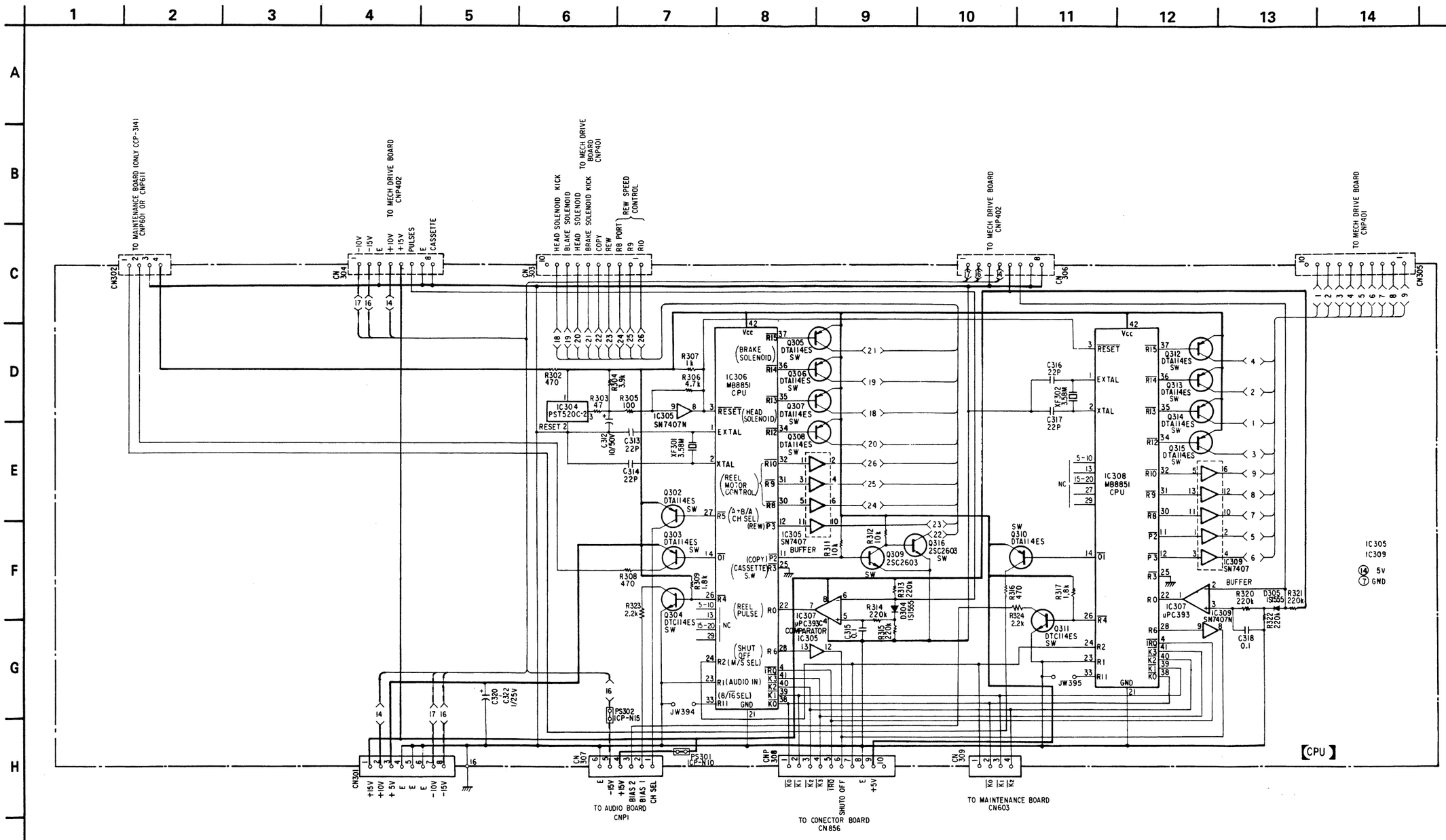
7-7. CPU BOARD (S) — *Soldering Side* —

【CPU BOARD】

CN301	L-5	Q302	B-4
CN302	E-3	Q303	F-3
CN303	E-3	Q304	A-5
CN304	E-5	Q305	D-3
CN305	L-4	Q306	D-3
CN306	L-5	Q307	D-3
CN307	F-2	Q308	D-3
CN309	F-4	Q309	B-4
		Q310	L-4
CNP308	H-4	Q311	F-3
		Q312	K-5
D304	D-4	Q313	K-3
D305	K-4	Q314	K-3
		Q315	K-3
IC304	C-4	Q316	A-4
IC305	B-3		
IC306	B-3		
IC307	D-4		
IC308	J-3		
IC309	H-3		



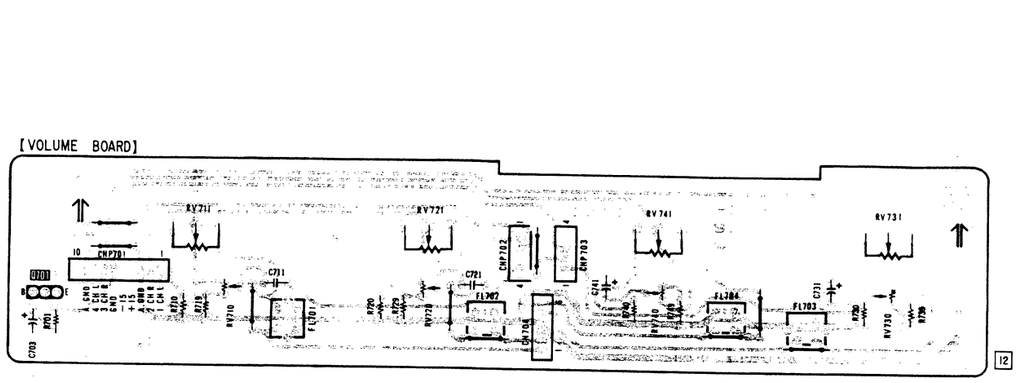
Note:
- ▒▒ : B+ pattern.

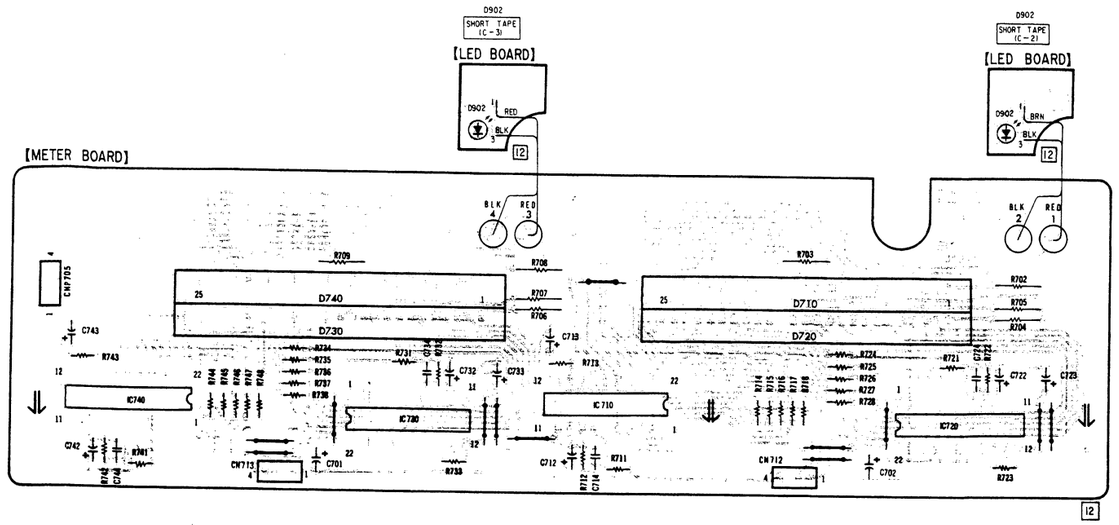


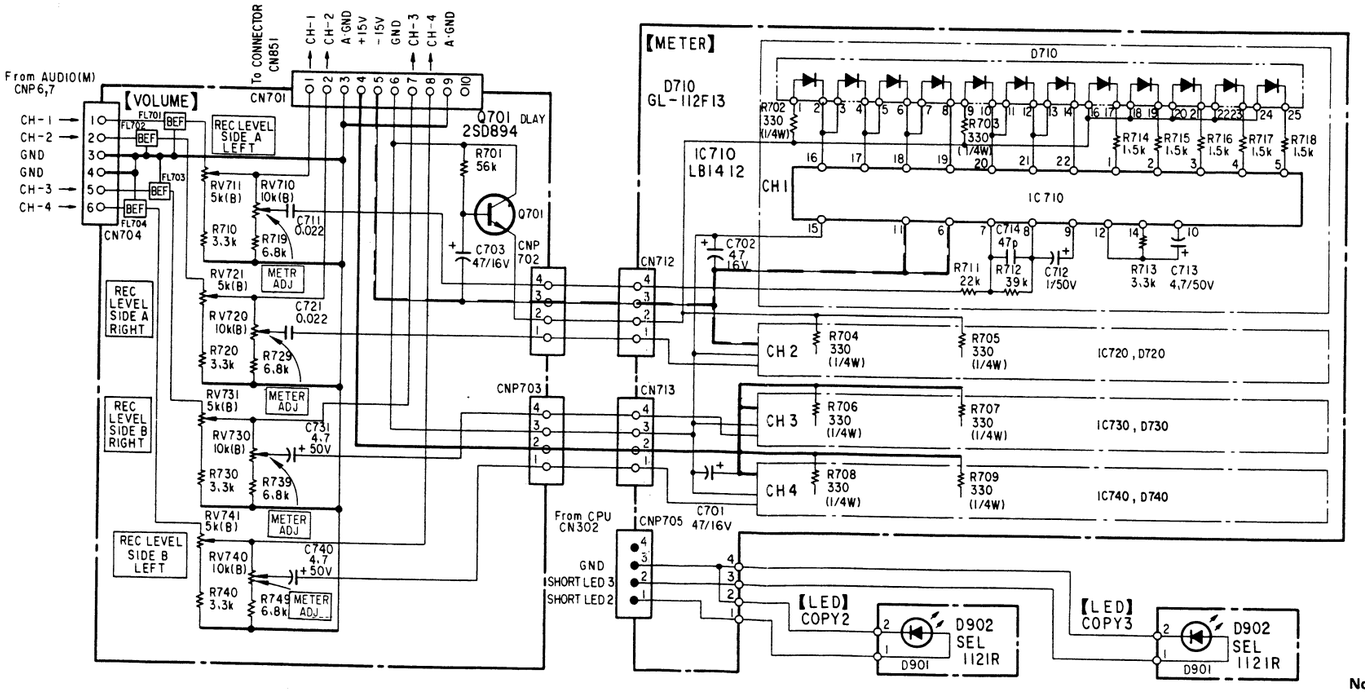
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/10 W or less unless otherwise specified.
- ▬▬ : B+ bus.
- ▬ ▬ : B− bus.

7-8. VOLUME, METER BOARD — *Soldering Side* —







Note:

- ▒▒ : B+ pattern.

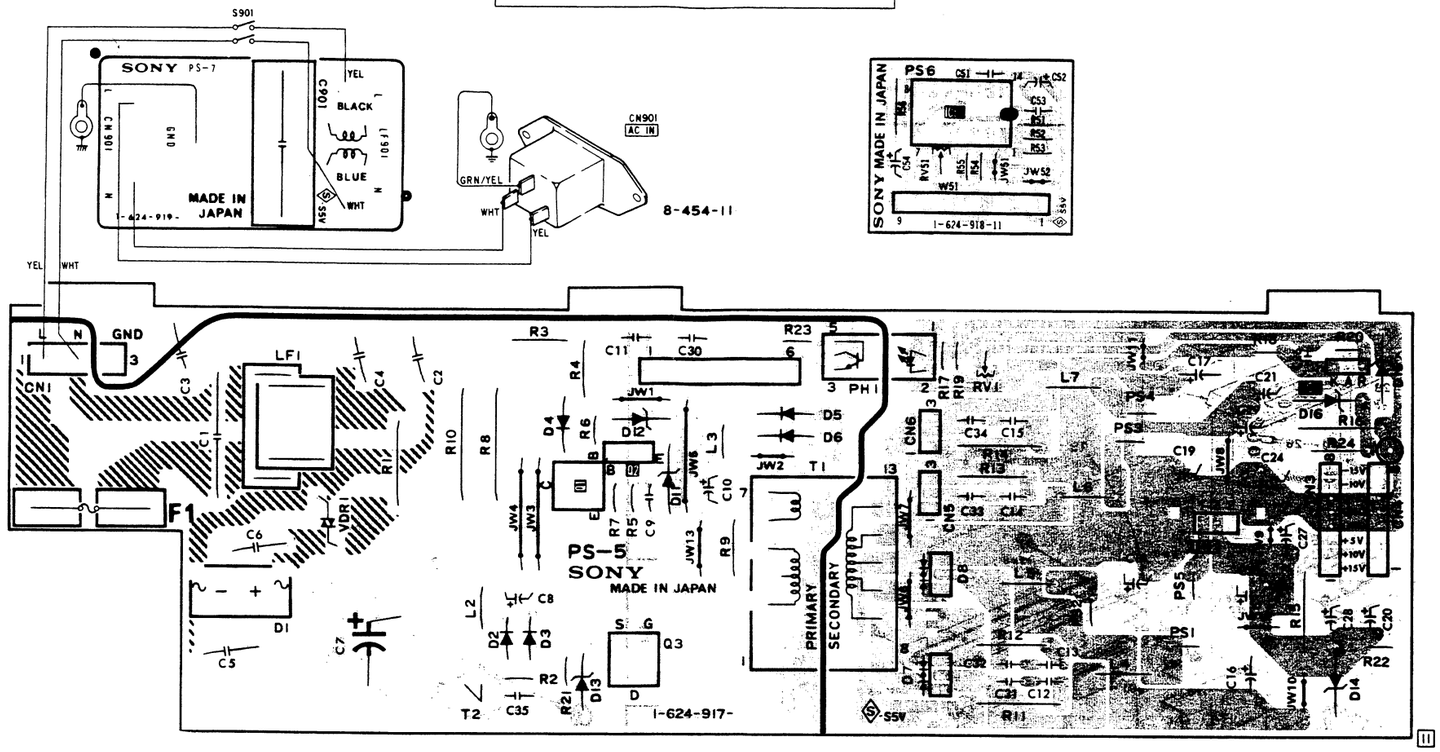
Note:

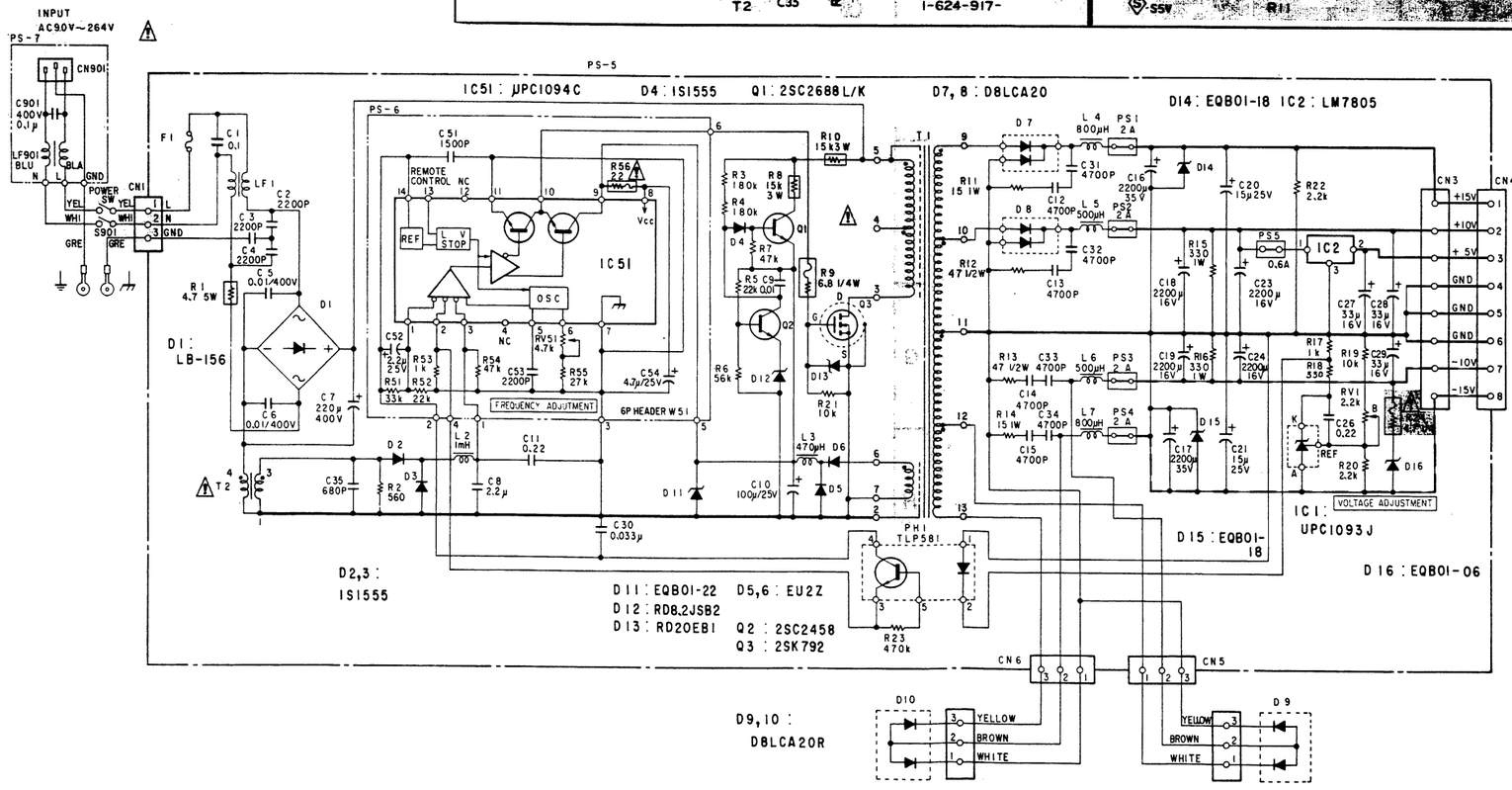
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/10 W or less unless otherwise specified.
- ▬▬ : B+ bus.
- ▬ ▬ ▬ : B− bus.
- ▭ : adjustment for repair.

7-9. PS-5, 6, 7 BOARD — *Soldering Side* —

Note:

- ▒▒▒ : B+ pattern.



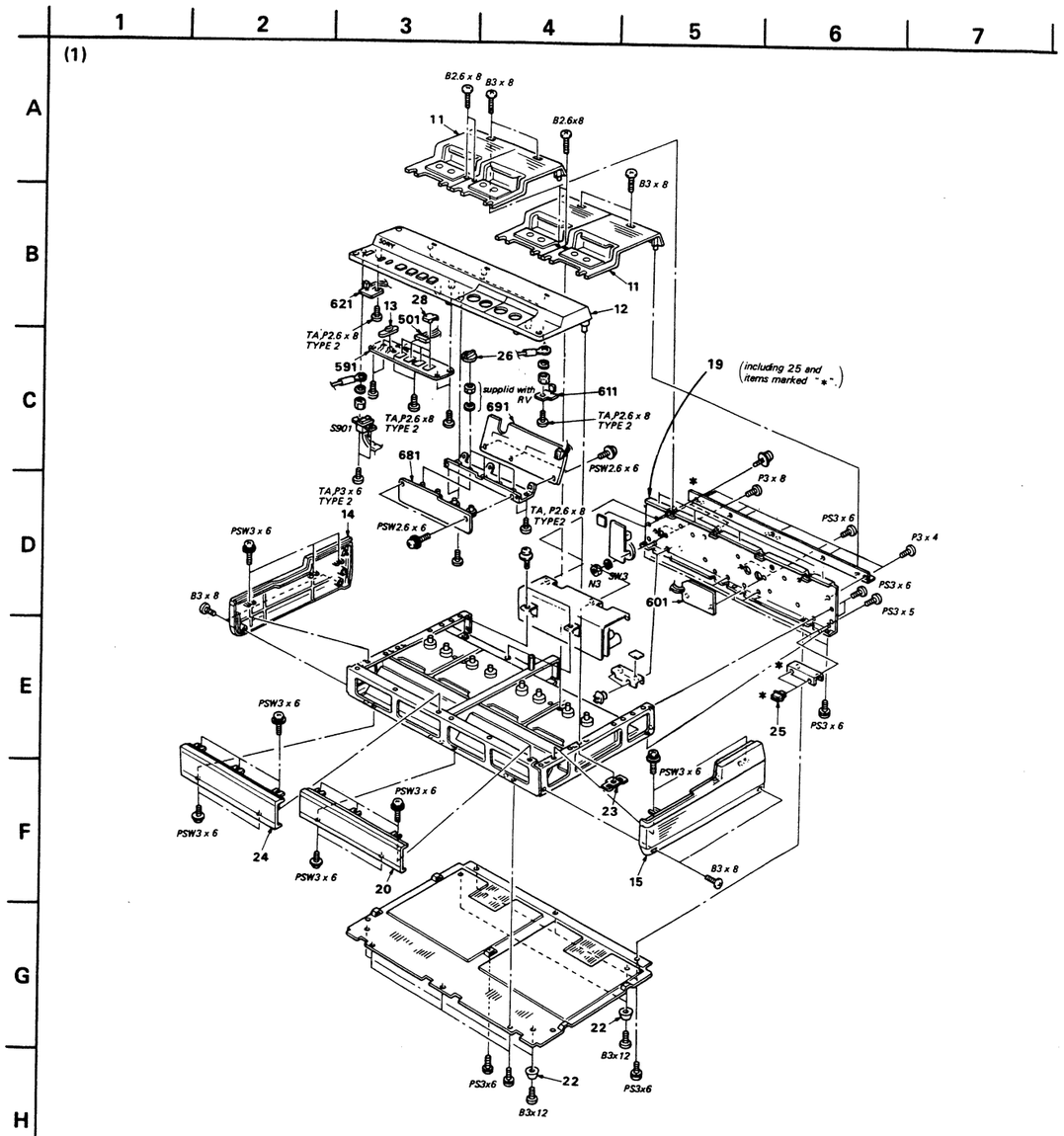


Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

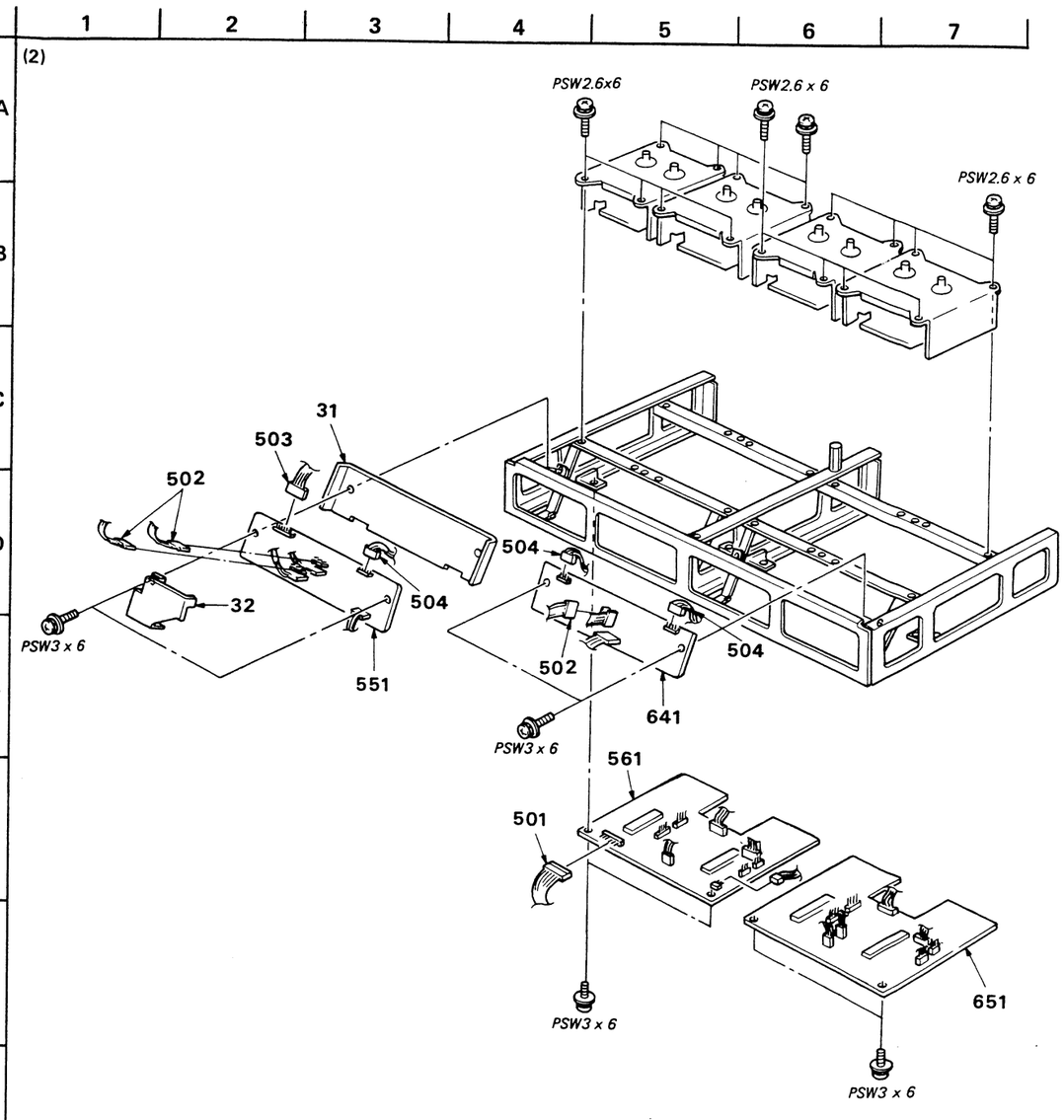
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/10W or less unless otherwise specified.
- ▭ : panel designation.
- ▬▬ : B+ bus.
- ▬ ▬ : B− bus.

7-10. PARTS LIST

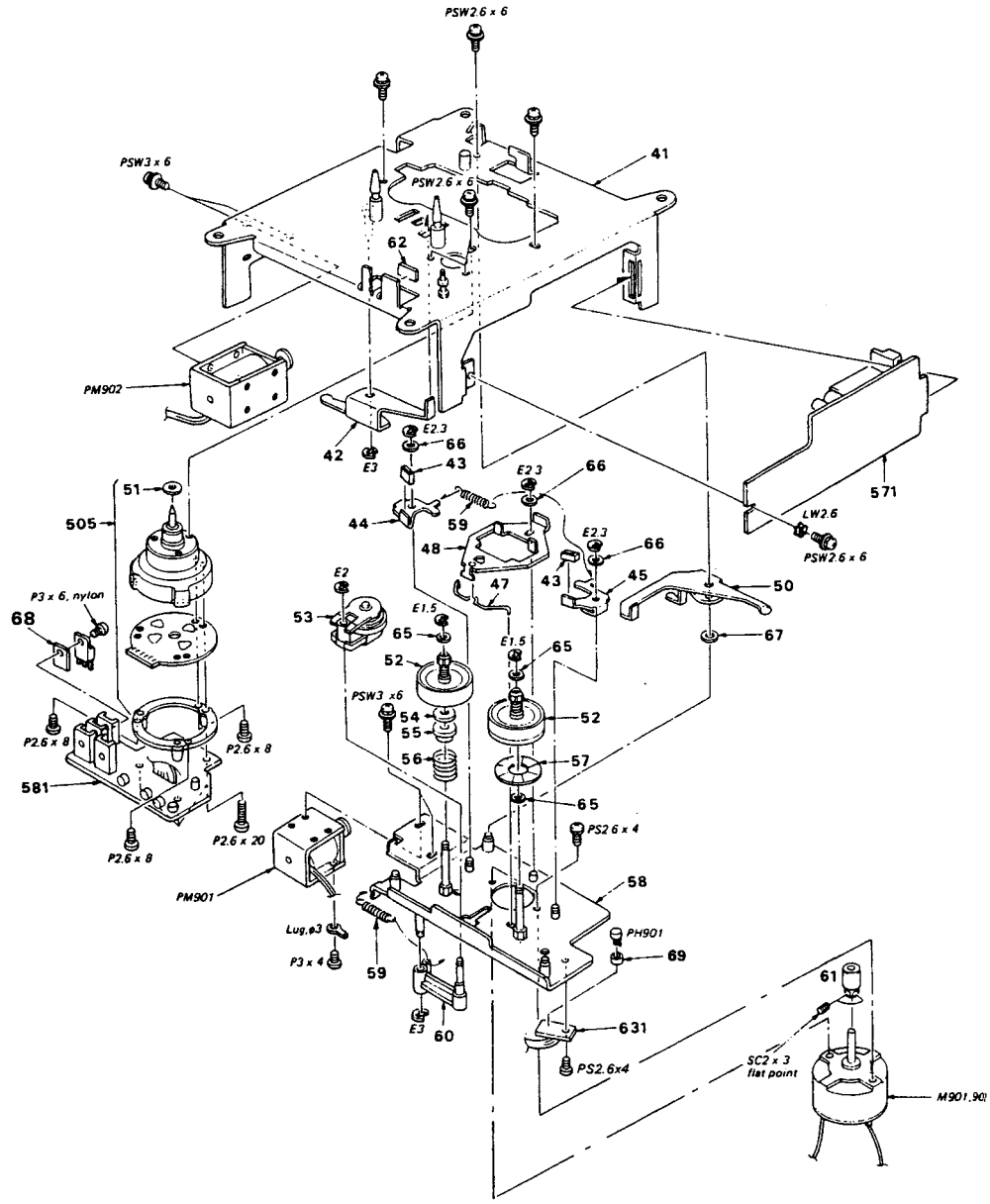


Ref.No.	Part No.	Descreption	価格
11	*X-3162-308-2	PLATE(REAR) ASSY,TOP	L
12	*X-3162-331-1	PLATE(FRONT) ASSY,TOP	S
13	3-162-328-01	KNOB	B
14	*3-162-383-01	PLATE(LEFT),SIDE	G
15	*3-162-382-01	PLATE(RIGHT),SIDE	G
19	*A-2563-145-A	REAR PANEL,ASSY	
20	*3-162-380-61	PLATE,FRONT	G
22	X-4809-908-9	FOOT,RUBBER	A
23	*3-162-324-01	NUT,PLATE	A
24	*3-162-380-71	PLATE,FRONT&N	E
25	*3-642-310-00	HOLDER,CIRCUIT BOARD	A
26	3-155-404-00	KNOB	B
28	*3-162-405-01	COVER,BUTTON	B



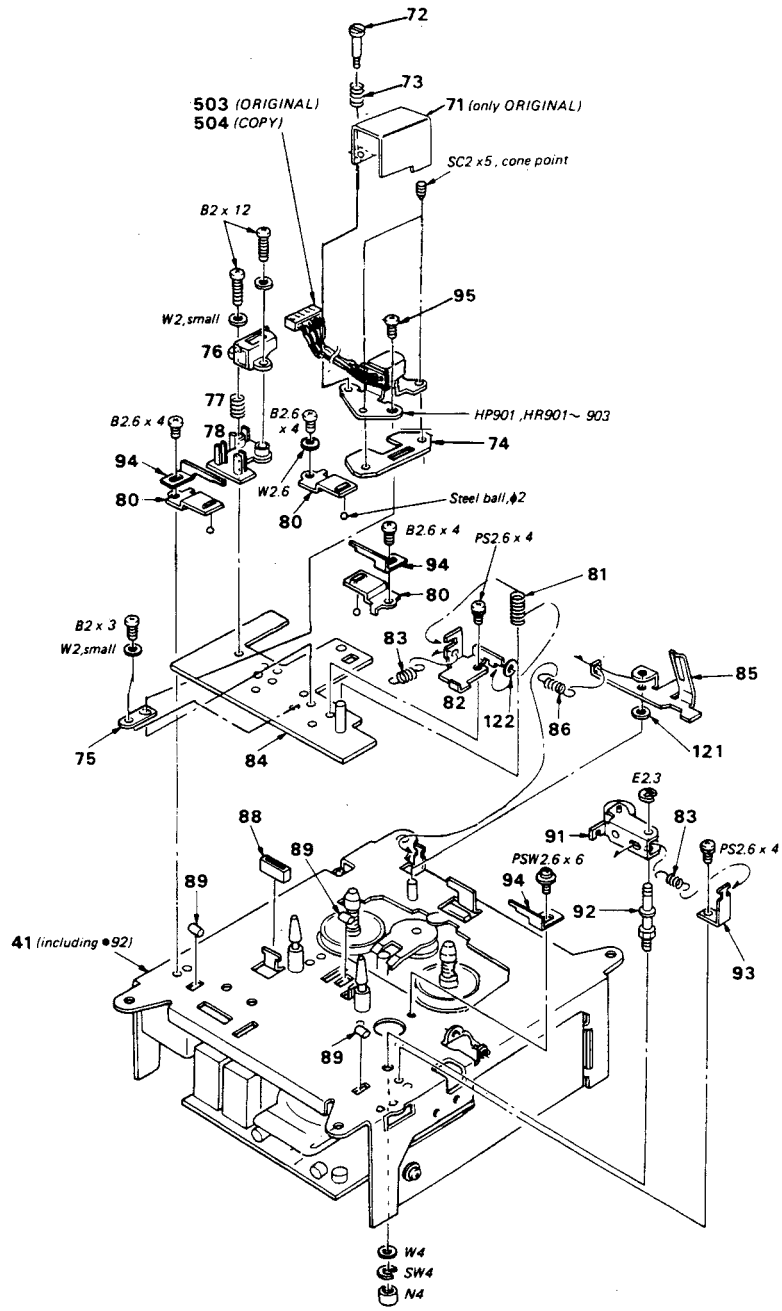
Ref.No.	Part No.	Descreption	価格
30	*4-906-052-01	SUPPORT(B)	B
31	*3-162-368-01	SHEET,SHIELD	D
32	*3-162-461-01	PLATE,SHIELD	C

(3)

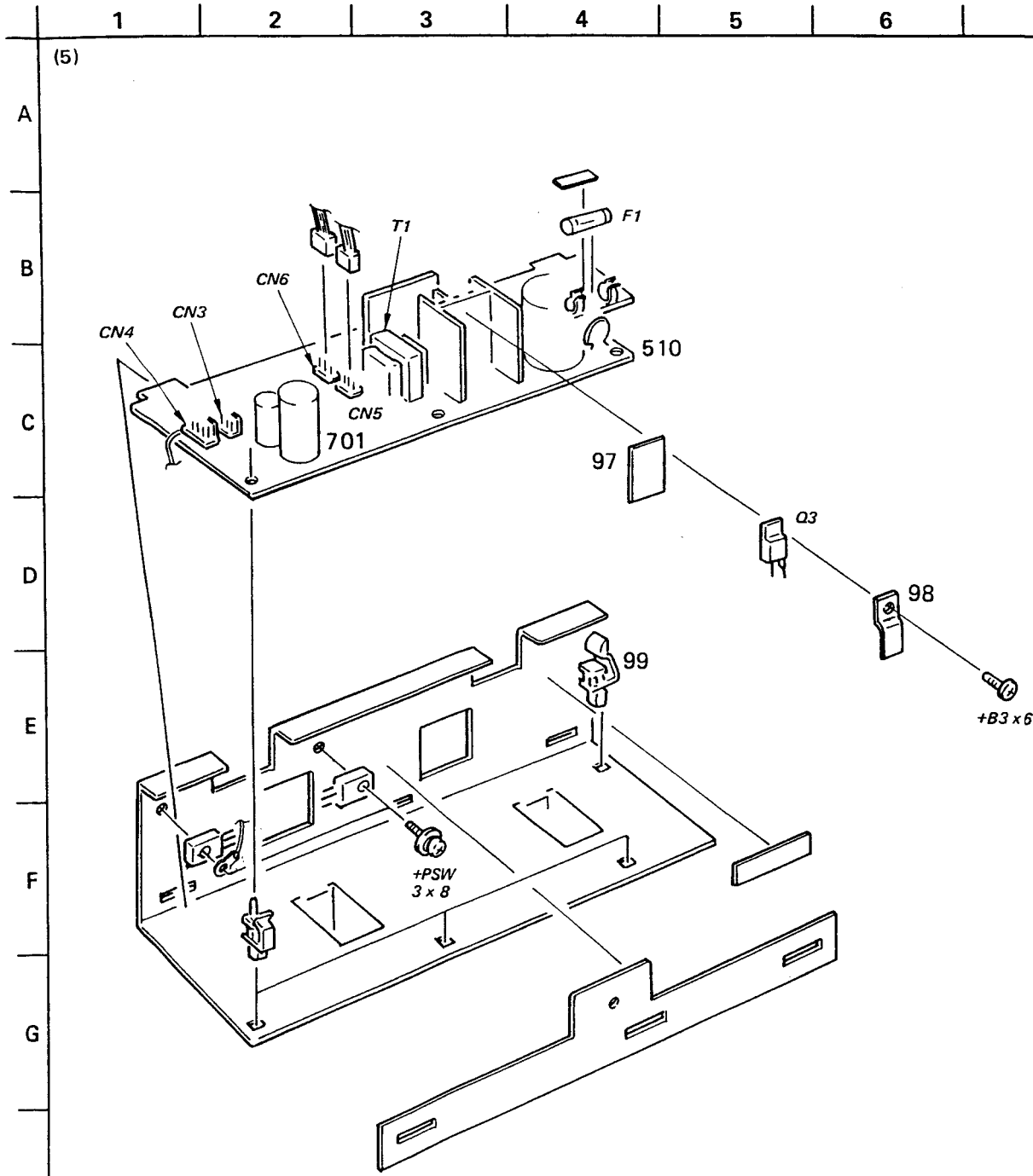


Ref.No.	Part No.	Descreption	価格	Ref.No.	Part No.	Descreption	価格
41	*X-3162-313-1	CHASSIS ASSY,MECHANICAL	L	56	3-152-738-00	SPRING,COMPRESSION	A
42	*3-162-313-01	LEVER,FWD	A	57	3-155-352-00	REFLECTOR	A
43	3-162-366-01	RUBBER,BRAKE	F	58	*X-3162-303-3	CHASSIS ASSY,REEL	K
44	*3-162-351-01	LEVER(LEFT),BRAKE	B	59	3-489-123-00	SPRING,TENSION	A
45	*3-162-354-01	LEVER(RIGHT),BRAKE	B	60	*X-3162-304-1	ARM(1) ASSY,IDLER	D
47	3-162-364-02	SPRING	B	61	3-162-357-01	PULLEY,MOTOR	G
48	*X-3162-307-3	PLATE ASSY,RELEASE,BRAKE	C	62	9-911-848-XX	CUSHION(S)	H
50	*3-162-319-01	LEVER,BRAKE	B	65	3-701-437-21	WASHER	A
51	3-162-415-01	WASHER,THRUST	A	66	3-701-439-21	WASHER	A
52	X-3162-317-1	TABLE ASSY,REEL	G	67	3-701-444-21	WASHER,6	A
53	A-2191-025-A	PULLEY COMPETE ASSY,IDLER	N	68	*3-577-157-20	INSULATOR,TO-126	A
54	3-162-310-01	FELT,CLUTCH	A	69	*3-162-367-01	SPACER	B
55	3-162-356-01	RING,B.T	C				

(4)



Ref.No.	Part No.	Descreption	価格	Ref.No.	Part No.	Descreption	価格
41	*X-3162-313-1	CHASSIS ASSY,MECHANICAL	L	83	3-446-154-XX	SPRING,TENSION	A
71	*3-162-488-01	PLATE,SHIELD,HEAD	B	84	*X-3162-329-1	CHASSIS(M) ASSY,HEAD	F
72	3-491-136-00	SCREW,HEAD ADJUSTING	A	85	*3-162-337-01	LEVER,CASSETTE RETAINER	C
73	3-162-395-01	SPRING,COMPRESSION	B	86	3-530-249-XX	SPRING,TENSION	A
74	3-162-422-01	SPACER(1)	A	88	*3-483-026-41	RETAINER,THRUST,MOTOR	A
75	*3-162-486-01	PLATE,LOCK,SCREW	A	89	3-558-448-00	ROLLER,HEAD CHASSIS	A
76	8-825-724-00	HEAD,ERASE EF-201-36(GUIDE,TAPE)	H	91	X-3162-306-1	PINCH ROLLER ASSY	F
77	3-481-272-00	SPRING,COMPRESSION	A	92	*3-162-390-01	SHAFT,PINCH ROLLER	E
78	*3-162-376-01	BRACKER,TAPE GUIDE	B	93	*3-162-344-01	BLACVKET,L	A
80	*3-162-312-01	SPRING	A	94	*3-162-426-01	RETAINER,BASE	A
81	3-162-399-01	SPRING	B	95	7-621-770-67	SCREW(M2.6x6),(+)SPECIAL HEAD	A
82	*3-162-345-02	HOOK,SPRING	A	121	3-701-441-21	WASHER	A



Ref.No.	Part No.	Descreption	価格
97	2-291-518-00	INSULATOR(E)	A
98	*2-434-297-01	BRACKET	A
99	*4-321-929-00	HORDER,PC BOARDER	A

Ref.No.	Part No.	Description		価格
		Accessories		
	X-3701-105-0	HEAD CLEANING TIP	1	A
	⚠1-534-754-00	CORD,POWER (J ONLY)	1	G
	⚠1-551-812-11	CORD,POWER (US ONLY)	1	
	⚠1-556-760-11	CORD,POWER (3 CORE) (AEP,UK ONLY)	1	
	*3-162-452-01	COVER,DUST	1	H
	3-769-745-01	MANUAL,INSTRUCTION (J ONLY)	1	E
	3-769-745-11	MANUAL,INSTRUCTION (US,UK,AEP ONLY)	1	
	3-769-745-41	MANUAL,INSTRUCTION (AEP ONLY)	1	
		LEAFLET (J ONLY)	1	
		CARD,WARRANTY (J ONLY)	1	
		Electrical Parts		
501	*1-558-063-11	CABLE,CONNECTION (2MM PITCH)		H
502	*1-558-308-11	LEAD (WITH CONNECTOR)8P		J
503	*1-558-165-11	LEAD (WITH CONNECTOR)12P		K
504	*1-558-071-11	LEAD (WITH CONNECTOR)8P		E
505	1-541-316-11	MOTOR,CAPSTAN		S
510	*1-533-189-11	HOLDER,FUSE		A
[illegible]				
[illegible]				
HP901	8-825-648-10	HEAD PF-165-3604B (PLAYBACK)		VE
HR901	8-825-649-10	HEAD PF-165-3604A (RECORD)		VE
HR902	8-825-649-10	HEAD PF-165-3604A (RECORD)		VE
HR903	8-825-649-10	HEAD PF-165-3604A (RECORD)		VE
M901	1-541-163-00	MOTOR		J
M902	1-541-163-00	MOTOR		J
PM901	1-454-404-11	SOLENOID,PLUNGER		J
PM902	1-454-405-11	SOLENOID,PLUNGER		J
RV711	1-237-105-11	RES,VAR,CARBON 5K		E
RV721	1-237-105-11	RES,VAR,CARBON 5K		E
RV731	1-237-105-11	RES,VAR,CARBON 5K		E
RV741	1-237-105-11	RES,VAR,CARBON 5K		E
[illegible]				

Ref.No.	Part No.	Description				価格
		Audio Board (M)				
551	*A-2010-260-A	MOUNTED PCB (M),AUDIO				
C5	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C6	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C8	1-135-070-00	TANTAL. CHIP	0.1MF	20%	35V	B
C9	1-136-161-00	MYLAR	0.047MF	10%	50V	A
C10	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	A
C11	1-135-091-00	TANTAL. CHIP	1MF	20%	16V	B
C12	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	A
C13	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C15	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C16	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	A
C18	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	B
C20	1-124-236-00	ELECT	47MF	20%	16V	A
C21	1-124-236-00	ELECT	47MF	20%	16V	A
C26	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C27	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C29	1-135-070-00	TANTAL. CHIP	0.1MF	20%	35V	B
C30	1-136-161-00	MYLAR	0.047MF	10%	50V	A
C31	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	A
C32	1-135-091-00	TANTAL. CHIP	1MF	20%	16V	B
C33	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	A
C34	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C36	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C37	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	A
C39	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	B
C41	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C42	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C44	1-135-070-00	TANTAL. CHIP	0.1MF	20%	35V	B
C45	1-136-161-00	MYLAR	0.047MF	10%	50V	A
C46	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	A
C47	1-135-091-00	TANTAL. CHIP	1MF	20%	16V	B
C48	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	A
C49	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C51	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C52	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	A
C54	1-135-083-00	CERAMIC CHIP	0.47MF	20%	25V	B
C56	1-107-169-00	MICA	100PF	10%	500V	A
C57	1-124-236-00	ELECT	47MF	20%	16V	A
C58	1-124-236-00	ELECT	47MF	20%	16V	A
C63	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C64	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A

NOTE:

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
· All resistors are in ohms.
· F : nonflammable

COILS
· MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description				価格
C66	1-135-070-00	TANTAL. CHIP	0.1MF	20%	35V	B
C67	1-136-161-00	MYLAR	0.047MF	10%	50V	A
C68	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	A
C69	1-135-091-00	TANTAL. CHIP	1MF	20%	16V	B
C70	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	A
C71	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C73	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C74	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	A
C76	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	B
C78	1-107-169-00	MICA	100PF	10%	500V	A
C80	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	A
C90	1-135-070-00	TANTAL. CHIP	0.1MF	20%	35V	B
C91	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C92	1-124-247-00	ELECT	10MF	20%	25V	A
C94	1-124-247-00	ELECT	10MF	20%	25V	A
C95	1-124-247-00	ELECT	10MF	20%	25V	A
C96	1-124-247-00	ELECT	10MF	20%	25V	A
C97	1-124-247-00	ELECT	10MF	20%	25V	A
C98	1-124-465-00	ELECT	0.47MF	20%	50V	A
C99	1-131-353-00	TANTALUM	10MF	20%	35V	D
C101	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V	A
C102	1-109-631-00	MICA	330PF	5%	500V	F
C103	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C104	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C105	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C106	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C107	1-124-465-00	ELECT	0.47MF	20%	50V	A
CNP1	*1-560-465-00	PIN,CONNECTOR 12P				B
CNP2	*1-560-463-00	PIN,CONNECTOR 8P				B
CNP3	*1-560-469-00	PIN,CONNECTOR 6P				A
CNP4	*1-560-467-00	PIN,CONNECTOR 4P				A
CNP5	*1-560-467-00	PIN,CONNECTOR 4P				A
CNP6	*1-560-467-00	PIN,CONNECTOR 4P				A
CNP7	*1-560-467-00	PIN,CONNECTOR 4P				A

Ref.No.	Part No.	Description				価格
CP1	1-409-437-11	COIL,BIAS TRAP				E
CP2	1-409-437-11	COIL,BIAS TRAP				E
CP3	1-409-437-11	COIL,BIAS TRAP				E
CP4	1-409-437-11	COIL,BIAS TRAP				E
CP5	1-464-885-11	OSCILLATION BLOCK,BIAS				L
CP6	1-427-590-11	TRANSFORMER,INPUT/OUTPUT				E
D1	8-719-100-03	DIODE 1S2835				A
D3	8-719-100-03	DIODE 1S2835				A
D4	8-719-100-94	DIODE RD27ER2				A
D6	8-719-200-82	DIODE 11ES2				A
IC1	8-759-700-04	IC NJM2043D-D				F
IC4	8-759-100-06	IC UPC4556C				E
IC5	8-759-900-72	IC NE5532P				G
IC8	8-759-700-04	IC NJM2043D-D				F
IC11	8-759-100-06	IC UPC4556C				E
IC12	8-759-900-72	IC NE5532P				G
IC15	8-759-100-06	IC UPC4556C				E
JR1	1-216-295-00	METAL CHIP	0	5%	1/10W	A
JR2	1-216-295-00	METAL CHIP	0	5%	1/10W	A
L1	1-410-310-11	COIL,VARIABLE				E
L2	1-410-310-11	COIL,VARIABLE				E
L3	1-410-310-11	COIL,VARIABLE				E
L4	1-410-310-11	COIL,VARIABLE				E
L5	1-410-311-11	COIL (SHIELD TYPE)				D
L6	1-410-311-11	COIL (SHIELD TYPE)				D
Q1	8-729-100-66	TRANSISTOR 2SC1623				A
Q2	8-729-100-66	TRANSISTOR 2SC1623				A
Q3	8-729-800-34	TRANSISTOR 2SC3070				C
Q4	8-729-801-72	TRANSISTOR 2SC2603-E				A
Q5	8-729-100-66	TRANSISTOR 2SC1623				A
Q6	8-729-100-66	TRANSISTOR 2SC1623				A
Q17	8-729-901-07	TRANSISTOR DTA124XK				A

・★ 印の部品は常備在庫しておりません。
・半導体は改良のため予告なく変更することがあります。
・コンデンサーの単位でMFはμFを，pFはμμFを示します。
・マイクロインダクターの単位で，MMHはmHを，UHはμHを示します。
・抵抗の単位Ωは省略してあります。
・キ ン ピ：金属被膜抵抗。
・サンキン：酸化金属被膜抵抗。
・記載されていない抵抗，コンデンサーについては，「補修用標準コンデンサー，抵抗価格表」を参照してください。
・抵抗の品名欄のFは不燃性抵抗を示します。
・半導体の名称でUA…，UPA…，UPB…，UPC…，UPD…等はそれぞれμA…，μPA…，μPB…，μPC…，μPD…を示します。
・同じ回路が複数あるような場合(例えばステレオ機など)の抵抗・コンデンサーについては，代表のみを表示し，他は省略する場合があります。

⚠および▒印の部品は，安全性を維持するために，重要な部品です。従って交換時は，必ず指定の部品を使用して下さい。

Ref.No.	Part No.	Description				価格
R2	1-216-029-00	METAL CHIP	150	5%	1/10W	A
R3	1-247-881-00	CARBON	120K	5%	1/4W	A
R4	1-216-073-00	METAL CHIP	10K	5%	1/10W	A
R7	1-216-085-00	METAL CHIP	33K	5%	1/10W	A
R8	1-216-049-00	METAL CHIP	1K	5%	1/10W	A
R9	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R10	1-216-081-00	METAL CHIP	22K	5%	1/10W	A
R11	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R12	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R13	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R14	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	A
R15	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R16	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	A
R19	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R21	1-216-029-00	METAL CHIP	150	5%	1/10W	A
R22	1-247-881-00	CARBON	120K	5%	1/4W	A
R23	1-216-073-00	METAL CHIP	10K	5%	1/10W	A
R26	1-216-085-00	METAL CHIP	33K	5%	1/10W	A
R27	1-216-049-00	METAL CHIP	1K	5%	1/10W	A
R28	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R29	1-216-081-00	METAL CHIP	22K	5%	1/10W	A
R30	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R31	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R32	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R33	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	A
R34	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R35	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	A
R38	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R39	1-247-713-11	CARBON	1K	5%	1/4W	A
R40	1-247-713-11	CARBON	1K	5%	1/4W	A
R46	1-216-029-00	METAL CHIP	150	5%	1/10W	A
R47	1-247-881-00	CARBON	120K	5%	1/4W	A
R48	1-216-073-00	METAL CHIP	10K	5%	1/10W	A
R51	1-216-085-00	METAL CHIP	33K	5%	1/10W	A
R52	1-216-049-00	METAL CHIP	1K	5%	1/10W	A
R53	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R54	1-216-081-00	METAL CHIP	22K	5%	1/10W	A
R55	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R56	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R57	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R58	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	A
R59	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R60	1-216-029-00	METAL CHIP	6.8K	5%	1/10W	A
R63	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R66	1-216-029-00	METAL CHIP	150	5%	1/10W	A
R67	1-247-881-00	CARBON	120K	5%	1/4W	A
R68	1-216-073-00	METAL CHIP	10K	5%	1/10W	A
R71	1-216-085-00	METAL CHIP	33K	5%	1/10W	A
R72	1-216-049-00	METAL CHIP	1K	5%	1/10W	A
R73	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R74	1-216-081-00	METAL CHIP	22K	5%	1/10W	A
R75	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R76	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R77	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R78	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	A

Ref.No.	Part No.	Description				価格
R79	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R80	1-216-029-00	METAL CHIP	6.8K	5%	1/10W	A
R83	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R85	1-247-713-11	CARBON	1K	5%	1/4W	A
R86	1-247-713-11	CARBON	1K	5%	1/4W	A
R91	1-216-081-00	METAL CHIP	22K	5%	1/10W	A
R92	1-216-081-00	METAL CHIP	22K	5%	1/10W	A
R93	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R94	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R95	1-216-091-00	METAL CHIP	56K	5%	1/10W	A
R96	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R97	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R100	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R101	1-247-719-11	CARBON	3.3K	5%	1/4W	A
R102	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R103	1-216-073-00	METAL CHIP	10K	5%	1/10W	A
R104	1-216-097-00	METAL CHIP	100K	5%	1/10W	A
R105	1-247-731-11	CARBON	24	5%	1/2W	A
R111	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R112	1-216-097-00	METAL CHIP	100K	5%	1/10W	A
R113	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R114	1-216-097-00	METAL CHIP	100K	5%	1/10W	A
R115	1-215-421-11	FILM	1K	1%	1/6W	A
R122	1-216-097-00	METAL CHIP	100K	5%	1/10W	A
RV1	1-230-527-11	RES,ADJ,SOLID 100K				B
RV2	1-230-523-11	RES,ADJ,SOLID 10K				B
RV3	1-230-527-11	RES,ADJ,SOLID 100K				B
RV4	1-230-527-11	RES,ADJ,SOLID 100K				B
RV5	1-230-523-11	RES,ADJ,SOLID 10K				B
RV6	1-230-527-11	RES,ADJ,SOLID 100K				B
RV7	1-230-527-11	RES,ADJ,SOLID 100K				B
RV8	1-230-523-11	RES,ADJ,SOLID 10K				B
RV9	1-230-527-11	RES,ADJ,SOLID 100K				B
RV10	1-230-527-11	RES,ADJ,SOLID 100K				B
RV11	1-230-523-11	RES,ADJ,SOLID 10K				B
RV12	1-230-527-11	RES,ADJ,SOLID 100K				B
RV13	1-230-523-11	RES,ADJ,SOLID 10K				B
RV14	1-230-523-11	RES,ADJ,SOLID 10K				B
RV15	1-230-523-11	RES,ADJ,SOLID 10K				B
RV16	1-230-523-11	RES,ADJ,SOLID 10K				B
RY1	1-515-547-11	RELAY				J
RY2	1-515-547-11	RELAY				J

Bias 3 Board

C1	1-109-542-00	MICA	220PF	5%	50V	E
C2	1-109-542-00	MICA	220PF	5%	50V	E
C3	1-109-631-00	MICA	330PF	5%	500V	F
L1	1-427-590-11	TRANSFORMER,INPUT/OUTPUT				E
RV1	1-226-703-11	RES,ADJ,METAL GLAZE 10K				C
RV2	1-226-703-11	RES,ADJ,METAL GLAZE 10K				C

Ref.No.	Part No.	Description				価格
		Bias 4 Board				
C1	1-109-542-00	MICA	220PF	5%	50V	E
R1	1-249-385-11	CARBON	2.2	5%	1/4W	A
RV1	1-226-703-11	RES,ADJ,METAL GLAZE 10K				C
		Audio Board (S)				
641	*A-2010-261-A	MOUNTED PCB (S), AUDIO				
C2	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C3	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C4	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	A
C6	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	B
C9	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C10	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C11	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	A
C13	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	B
C18	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C19	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C20	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	A
C22	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	B
C25	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C26	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C27	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	A
C29	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	B
C33	1-107-169-00	MICA	100PF	10%	500V	A
C34	1-107-169-00	MICA	100PF	10%	500V	A
C35	1-124-247-00	ELECT	10MF	20%	25V	A
C36	1-124-247-00	ELECT	10MF	20%	25V	A
C37	1-124-247-00	ELECT	10MF	20%	25V	A
C38	1-124-247-00	ELECT	10MF	20%	25V	A
C39	1-124-465-00	ELECT	0.47MF	20%	50V	A
C40	1-131-353-00	TANTALUM	10MF	20%	35V	D
C41	1-136-161-00	MYLAR	0.047MF	10%	50V	A
C42	1-136-161-00	MYLAR	0.047MF	10%	50V	A
C43	1-136-161-00	MYLAR	0.047MF	10%	50V	A
C44	1-136-161-00	MYLAR	0.047MF	10%	50V	A
C45	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C46	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C47	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C48	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C49	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C50	1-124-465-00	ELECT	0.47MF	20%	50V	A
C102	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C103	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C104	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	A
C106	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	B
C109	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C110	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C111	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	A
C113	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	B
C118	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C119	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C120	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	A

Ref.No.	Part No.	Description				価格
C122	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	B
C125	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V	A
C126	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	A
C127	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	A
C129	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	B
C133	1-107-169-00	MICA	100PF	10%	500V	A
C134	1-107-169-00	MICA	100PF	10%	500V	A
C135	1-124-247-00	ELECT	10MF	20%	25V	A
C136	1-124-247-00	ELECT	10MF	20%	25V	A
C137	1-124-247-00	ELECT	10MF	20%	25V	A
C138	1-124-247-00	ELECT	10MF	20%	25V	A
C139	1-124-465-00	ELECT	0.47MF	20%	50V	A
C140	1-131-353-00	TANTALUM	10MF	20%	35V	D
C141	1-136-161-00	MYLAR	0.047MF	10%	50V	A
C142	1-136-161-00	MYLAR	0.047MF	10%	50V	A
C143	1-136-161-00	MYLAR	0.047MF	10%	50V	A
C144	1-136-161-00	MYLAR	0.047MF	10%	50V	A
C145	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C146	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C147	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C148	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C149	1-130-472-00	MYLAR	0.0012MF	5%	50V	A
C150	1-124-465-00	ELECT	0.47MF	20%	50V	A
CNP1	*1-560-469-00	PIN,CONNECTOR 6P				A
CNP2	*1-560-470-00	PIN,CONNECTOR 8P				A
CNP3	*1-560-470-00	PIN,CONNECTOR 8P				A
CNP4	*1-560-463-00	PIN,CONNECTOR 8P				B
CNP104	*1-560-463-00	PIN,CONNECTOR 8P				B
CP1	1-409-437-11	COIL,BIAS TRAP				E
CP2	1-409-437-11	COIL,BIAS TRAP				E
CP3	1-409-437-11	COIL,BIAS TRAP				E
CP4	1-409-437-11	COIL,BIAS TRAP				E
CP5	1-464-885-11	OSCILLATION BLOCK,BIAS				L
CP101	1-409-437-11	COIL,BIAS TRAP				E
CP102	1-409-437-11	COIL,BIAS TRAP				E
CP103	1-409-437-11	COIL,BIAS TRAP				E
CP104	1-409-437-11	COIL,BIAS TRAP				E
CP105	1-464-885-11	OSCILLATION BLOCK,BIAS				L
D1	8-719-200-82	DIODE 1IES2				A
D2	8-719-100-03	DIODE 1S2835				A
D3	8-719-100-94	DIODE RD27EB2				A
D101	8-719-200-82	DIODE 1IES2				A
D103	8-719-100-94	DIODE RD27EB2				A
IC1	8-759-900-72	IC NE5532P				G
IC4	8-759-900-72	IC NE5532P				G
IC101	8-759-900-72	IC NE5532P				G
IC104	8-759-900-72	IC NE5532P				G
L1	1-410-310-11	COIL,VARIABLE				E
L2	1-410-310-11	COIL,VARIABLE				E
L3	1-410-310-11	COIL,VARIABLE				E
L4	1-410-310-11	COIL,VARIABLE				E
L5	1-410-311-11	COIL (SHIELD TYPE)				D

Ref.No.	Part No.	Description				価格
L6	1-410-311-11	COIL (SHIELD TYPE)				D
L101	1-410-310-11	COIL, VARIABLE				E
L102	1-410-310-11	COIL, VARIABLE				E
L103	1-410-310-11	COIL, VARIABLE				E
L104	1-410-310-11	COIL, VARIABLE				E
L105	1-410-311-11	COIL (SHIELD TYPE)				D
L106	1-410-311-11	COIL (SHIELD TYPE)				D
Q1	8-729-100-66	TRANSISTOR 2SC1623				A
Q2	8-729-800-34	TRANSISTOR 2SC3070				C
Q3	8-729-801-72	TRANSISTOR 2SC2603-E				A
Q9	8-729-901-07	TRANSISTOR DTA124XK				A
Q101	8-729-100-66	TRANSISTOR 2SC1623				A
Q102	8-729-800-34	TRANSISTOR 2SC3070				C
Q103	8-729-801-72	TRANSISTOR 2SC2603-E				A
Q109	8-729-901-07	TRANSISTOR DTA124XK				A
R1	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R2	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R3	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R4	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R5	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	A
R8	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	A
R9	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R10	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R11	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R12	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R13	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R14	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	A
R17	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	A
R18	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R21	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R22	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R23	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R24	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R25	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	A
R28	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	A
R29	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R31	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R32	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R33	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R34	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R35	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	A
R38	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	A
R39	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R43	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R44	1-247-719-11	CARBON	3.3K	5%	1/4W	A
R45	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R46	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R47	1-216-097-00	METAL CHIP	100K	5%	1/10W	A
R48	1-247-731-11	CARBON	24	5%	1/2W	A
R50	1-216-097-00	METAL CHIP	100K	5%	1/10W	A
R51	1-215-421-11	FILM	1K	1%	1/6W	A
R101	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R102	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R103	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R104	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R105	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	A
R108	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	A
R109	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R110	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R111	1-216-089-00	METAL CHIP	47K	5%	1/10W	A

Ref.No.	Part No.	Description				価格
R112	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R113	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R114	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	A
R117	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	A
R118	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R121	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R122	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R123	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R124	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R125	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	A
R128	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	A
R129	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R131	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R132	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R133	1-216-021-00	METAL CHIP	68	5%	1/10W	A
R134	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	A
R135	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	A
R138	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	A
R139	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R143	1-216-089-00	METAL CHIP	47K	5%	1/10W	A
R144	1-247-719-11	CARBON	3.3K	5%	1/4W	A
R145	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	A
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W	A
R147	1-216-097-00	METAL CHIP	100K	5%	1/10W	A
R148	1-247-731-11	CARBON	24	5%	1/2W	A
R150	1-216-097-00	METAL CHIP	100K	5%	1/10W	A
R151	1-215-421-11	FILM	1K	1%	1/6W	A
RV1	1-230-527-11	RES, ADJ, SOLID	100K			B
RV2	1-230-527-11	RES, ADJ, SOLID	100K			B
RV3	1-230-527-11	RES, ADJ, SOLID	100K			B
RV4	1-230-527-11	RES, ADJ, SOLID	100K			B
RV101	1-230-527-11	RES, ADJ, SOLID	100K			B
RV102	1-230-527-11	RES, ADJ, SOLID	100K			B
RV103	1-230-527-11	RES, ADJ, SOLID	100K			B
RV104	1-230-527-11	RES, ADJ, SOLID	100K			B
RY1	1-515-547-11	RELAY				J
RY2	1-515-547-11	RELAY				J
RY101	1-515-547-11	RELAY				J
RY102	1-515-547-11	RELAY				J

Bias 1 Board

C11	1-109-542-00	MICA	220PF	5%	50V	E
C12	1-109-542-00	MICA	220PF	5%	50V	E
C13	1-109-542-00	MICA	220PF	5%	50V	E
C14	1-109-542-00	MICA	220PF	5%	50V	E
C15	1-109-631-00	MICA	330PF	5%	500V	F
C16	1-109-631-00	MICA	330PF	5%	500V	F
L1	1-427-590-11	TRANSFORMER, INPUT/OUTPUT				E
L2	1-427-590-11	TRANSFORMER, INPUT/OUTPUT				E
R1	1-249-385-11	CARBON	2.2	5%	1/4W	A
R2	1-249-385-11	CARBON	2.2	5%	1/4W	A
RV1	1-226-703-11	RES, ADJ, METAL GLAZE	10K			C
RV2	1-226-703-11	RES, ADJ, METAL GLAZE	10K			C
RV3	1-226-703-11	RES, ADJ, METAL GLAZE	10K			C
RV4	1-226-703-11	RES, ADJ, METAL GLAZE	10K			C

Ref.No.	Part No.	Description				価格
		Bias 2 Board				
C17	1-109-542-00	MICA	220PF	5%	50V	E
C18	1-107-181-00	MICA	220PF	5%	50V	E
C19	1-107-181-00	MICA	220PF	5%	50V	E
C20	1-107-181-00	MICA	220PF	5%	50V	E
C21	1-109-631-00	MICA	330PF	5%	500V	F
C22	1-109-631-00	MICA	330PF	5%	500V	F
L3	1-427-590-11	TRANSFORMER, INPUT/OUTPUT				E
L4	1-427-590-11	TRANSFORMER, INPUT/OUTPUT				E
R3	1-249-385-11	CARBON	2.2	5%	1/4W	A
R4	1-249-385-11	CARBON	2.2	5%	1/4W	A
RV5	1-226-703-11	RES, ADJ, METAL GLAZE 10K				C
RV6	1-226-703-11	RES, ADJ, METAL GLAZE 10K				C
RV7	1-226-703-11	RES, ADJ, METAL GLAZE 10K				C
RV8	1-226-703-11	RES, ADJ, METAL GLAZE 10K				C
		CPU Board (M)				
561	*A-2012-143-A	MOUNTED PCB (M), CPU				
C212	1-124-261-00	ELECT	10MF	20%	50V	A
C213	1-102-959-00	CERAMIC	22PF	5%	50V	A
C214	1-102-959-00	CERAMIC	22PF	5%	50V	A
C215	1-130-495-00	MYLAR	0.1MF	5%	50V	A
C216	1-102-959-00	CERAMIC	22PF	5%	50V	A
C217	1-102-959-00	CERAMIC	22PF	5%	50V	A
C218	1-130-495-00	MYLAR	0.1MF	5%	50V	A
C220	1-131-347-00	TANTALUM	1MF	10%	25V	C
C221	1-131-347-00	TANTALUM	1MF	10%	25V	C
C222	1-131-347-00	TANTALUM	1MF	10%	25V	C
CN203	*1-558-066-21	CABLE, CONNECTION (2MM PITCH) 10P				G
CN204	*1-558-065-11	CABLE, CONNECTION (2MM PITCH) 8P				F
CN205	*1-558-066-21	CABLE, CONNECTION (2MM PITCH) 10P				G
CN206	*1-558-065-11	CABLE, CONNECTION (2MM PITCH) 8P				F
CN207	*1-558-064-11	CABLE, CONNECTION (2MM PITCH) 6P				E
CNP202	*1-560-465-00	PIN, CONNECTOR 12P				B
CNP208	*1-560-471-00	PIN, CONNECTOR 10P				B
CNP210	*1-560-459-00	PIN, CONNECTOR 3P				A
CP1	1-235-351-11	BLOCK, RESISTOR 2.2Kx4				A
D204	8-719-911-19	DIODE 1SS119				A
D205	8-719-911-19	DIODE 1SS119				A
D206	8-719-911-19	DIODE 1SS119				A
D207	8-719-911-19	DIODE 1SS119				A
D208	8-719-911-19	DIODE 1SS119				A
D209	8-719-911-19	DIODE 1SS119				A
IC204	8-759-913-42	IC PST520C-2				F
IC205	8-759-974-07	IC SN7407N				F
IC206	8-759-922-93	IC MB8851-625M				L
IC207	8-759-103-93	IC UPC393C				F
IC208	8-759-922-93	IC MB8851-625M				L
IC209	8-759-974-07	IC SN7407N				F
PS201	1-532-605-00	LINK, IC				C
PS202	1-532-679-11	LINK, IC				B

Ref.No.	Part No.	Description				価格
Q202	8-729-900-61	TRANSISTOR DTA114ES				A
Q203	8-729-900-61	TRANSISTOR DTA114ES				A
Q204	8-729-900-61	TRANSISTOR DTA114ES				A
Q205	8-729-900-61	TRANSISTOR DTA114ES				A
Q206	8-729-900-61	TRANSISTOR DTA114ES				A
Q207	8-729-900-61	TRANSISTOR DTA114ES				A
Q208	8-729-900-61	TRANSISTOR DTA114ES				A
Q209	8-729-900-61	TRANSISTOR DTA114ES				A
Q210	8-729-900-80	TRANSISTOR DTC114ES				A
Q211	8-729-900-61	TRANSISTOR DTA114ES				A
Q212	8-729-900-61	TRANSISTOR DTA114ES				A
Q213	8-729-900-61	TRANSISTOR DTA114ES				A
Q214	8-729-900-61	TRANSISTOR DTA114ES				A
Q217	8-729-900-80	TRANSISTOR DTC114ES				A
R202	1-249-401-11	CARBON	47	5%	1/4W	A
R203	1-249-424-11	CARBON	3.9K	5%	1/4W	A
R204	1-249-405-11	CARBON	100	5%	1/4W	A
R205	1-249-425-11	CARBON	4.7K	5%	1/4W	A
R206	1-249-417-11	CARBON	1K	5%	1/4W	A
R211	1-249-413-11	CARBON	470	5%	1/4W	A
R212	1-249-413-11	CARBON	470	5%	1/4W	A
R215	1-247-887-00	CARBON	220K	5%	1/4W	A
R216	1-247-887-00	CARBON	220K	5%	1/4W	A
R217	1-247-887-00	CARBON	220K	5%	1/4W	A
R218	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R219	1-249-413-11	CARBON	470	5%	1/4W	A
R220	1-249-420-11	CARBON	1.8K	5%	1/4W	A
R223	1-247-887-00	CARBON	220K	5%	1/4W	A
R224	1-247-887-00	CARBON	220K	5%	1/4W	A
R225	1-247-887-00	CARBON	220K	5%	1/4W	A
R226	1-249-411-11	CARBON	330	5%	1/4W	A
R227	1-249-421-11	CARBON	2.2K	5%	1/4W	A
XF201	1-567-487-11	OSCILLATOR, CERAMIC				C
XF202	1-567-487-11	OSCILLATOR, CERAMIC				C
		CPU Board (S)				
651	*A-2012-144-A	MOUNTED PCB (S), CPU				
C312	1-124-261-00	ELECT	10MFF	20%	50V	A
C313	1-102-959-00	CERAMIC	22PF	5%	50V	A
C314	1-102-959-00	CERAMIC	22PF	5%	50V	A
C315	1-130-495-00	MYLAR	0.1MF	5%	50V	A
C316	1-102-959-00	CERAMIC	22PF	5%	50V	A
C317	1-102-959-00	CERAMIC	22PF	5%	50V	A
C318	1-130-495-00	MYLAR	0.1MF	5%	50V	A
C320	1-131-347-00	TANTALUM	1MF	10%	25V	C
C321	1-131-347-00	TANTALUM	1MF	10%	25V	C
C322	1-131-347-00	TANTALUM	1MF	10%	25V	C
CN301	*1-564-372-00	PIN, CONNECTOR 8P				E
CN302	*1-558-067-31	CABLE, CONNECTION (2MM PITCH) 4P				D
CN303	*1-558-066-21	CABLE, CONNECTION (2MM PITCH) 10P				G
CN304	*1-558-065-11	CABLE, CONNECTION (2MM PITCH) 8P				F
CN305	*1-558-066-21	CABLE, CONNECTION (2MM PITCH) 10P				G
CN306	*1-558-065-11	CABLE, CONNECTION (2MM PITCH) 8P				F
CN307	*1-558-064-11	CABLE, CONNECTION (2MM PITCH) 6P				E
CN309	*1-564-241-00	PIN, CONNECTOR 4P				A
CNP308	*1-560-471-00	PIN, CONNECTOR 10P				B

Ref.No.	Part No.	Description	価格
D304	8-719-911-19	DIODE 1SS119	A
D305	8-719-911-19	DIODE 1SS119	A
IC304	8-759-913-42	IC PST520C-2	F
IC305	8-759-974-07	IC SN7407N	F
IC306	8-759-922-93	IC MB8851-625M	L
IC307	8-759-103-93	IC UPC393C	F
IC308	8-759-922-93	IC MB8851-625M	L
IC309	8-759-974-07	IC SN7407N	F
PS301	1-532-605-00	LINK,IC	C
PS302	1-532-679-11	LINK,IC	B
Q302	8-729-900-61	TRANSISTOR DTA114ES	A
Q303	8-729-900-61	TRANSISTOR DTA114ES	A
Q304	8-729-900-80	TRANSISTOR DTC114ES	A
Q305	8-729-900-61	TRANSISTOR DTA114ES	A
Q306	8-729-900-61	TRANSISTOR DTA114ES	A
Q307	8-729-900-61	TRANSISTOR DTA114ES	A
Q308	8-729-900-61	TRANSISTOR DTA114ES	A
Q309	8-729-801-72	TRANSISTOR 2SC2603-E	A
Q310	8-729-900-61	TRANSISTOR DTA114ES	A
Q311	8-729-900-80	TRANSISTOR DTC114ES	A
Q312	8-729-900-61	TRANSISTOR DTA114ES	A
Q313	8-729-900-61	TRANSISTOR DTA114ES	A
Q314	8-729-900-61	TRANSISTOR DTA114ES	A
Q315	8-729-900-61	TRANSISTOR DTA114ES	A
Q316	8-729-801-72	TRANSISTOR 2SC2603-E	A
R302	1-249-413-11	CARBON 470 5% 1/4W	A
R303	1-249-401-11	CARBON 47 5% 1/4W	A
R304	1-249-424-11	CARBON 3.9K 5% 1/4W	A
R305	1-249-405-11	CARBON 100 5% 1/4W	A
R306	1-249-425-11	CARBON 4.7K 5% 1/4W	A
R307	1-249-417-11	CARBON 1K 5% 1/4W	A
R308	1-249-413-11	CARBON 470 5% 1/4W	A
R309	1-249-420-11	CARBON 1.8K 5% 1/4W	A
R311	1-249-429-11	CARBON 10K 5% 1/4W	A
R312	1-249-429-11	CARBON 10K 5% 1/4W	A
R313	1-247-887-00	CARBON 220K 5% 1/4W	A
R314	1-247-887-00	CARBON 220K 5% 1/4W	A
R315	1-247-887-00	CARBON 220K 5% 1/4W	A
R316	1-249-413-11	CARBON 470 5% 1/4W	A
R317	1-249-420-11	CARBON 1.8K 5% 1/4W	A
R320	1-247-887-00	CARBON 220K 5% 1/4W	A
R321	1-247-887-00	CARBON 220K 5% 1/4W	A
R322	1-247-887-00	CARBON 220K 5% 1/4W	A
R323	1-249-421-11	CARBON 2.2K 5% 1/4W	A
R324	1-249-421-11	CARBON 2.2K 5% 1/4W	A
XF301	1-567-487-11	OSCILLATOR,CERAMIC	C
XF302	1-567-487-11	OSCILLATOR,CERAMIC	C

Ref.No.	Part No.	Description	価格
		Mech Drive Board	
571	*A-2019-210-A	MOUNTED MECH DRIVE (S1)	
C401	1-124-236-00	ELECT 47MF 20% 16V	A
C402	1-124-631-11	ELECT 47MF 20% 16V	A
CNP401	*1-560-471-00	PIN,CONNECTOR 10P	B
CNP402	*1-560-470-00	PIN,CONNECTOR 8P	A
CNP403	*1-560-469-00	PIN,CONNECTOR 6P	A
D401	8-719-920-33	DIODE ERA15-04	
D402	8-719-200-82	DIODE 11ES2	A
D403	8-719-200-82	DIODE 11ES2	A
D404	8-719-911-19	DIODE 1SS119	A
D405	8-719-911-19	DIODE 1SS119	A
D406	8-719-911-19	DIODE 1SS119	A
D407	8-719-911-19	DIODE 1SS119	A
D408	8-719-100-13	DIODE RD2.7EB2	A
D409	8-719-920-33	DIODE ERA15-04	
IC401	8-741-122-10	IC BX-1221	K
Q401	8-729-900-63	TRANSISTOR DTA124ES	A
Q402	8-729-900-63	TRANSISTOR DTA124ES	A
Q403	8-729-900-80	TRANSISTOR DTC114ES	A
Q405	8-729-904-24	TRANSISTOR 2SD1788	C
Q406	8-729-800-83	TRANSISTOR 2SB808	B
Q407	8-729-800-83	TRANSISTOR 2SB808	B
Q408	8-729-811-22	TRANSISTOR 2SD1012-F2	A
Q409	8-729-811-22	TRANSISTOR 2SD1012-F2	A
Q410	8-729-802-87	TRANSISTOR 2SB892	B
R401	1-247-752-11	CARBON 1K 5% 1/2W	A
R402	1-249-425-11	CARBON 4.7K 5% 1/4W	A
R403	1-249-413-11	CARBON 470 5% 1/4W	A
R404	1-249-413-11	CARBON 470 5% 1/4W	A
R405	1-249-419-11	CARBON 1.5K 5% 1/4W	A
R406	1-249-423-11	CARBON 3.3K 5% 1/4W	A
R407	1-249-427-11	CARBON 6.8K 5% 1/4W	A
R408	1-249-421-11	CARBON 2.2K 5% 1/4W	A
R409	1-249-441-11	CARBON 100K 5% 1/4W	A
R410	1-249-417-11	CARBON 1K 5% 1/4W	A
R411	1-249-417-11	CARBON 1K 5% 1/4W	A
R413	1-249-425-11	CARBON 4.7K 5% 1/4W	A
R414	1-249-425-11	CARBON 4.7K 5% 1/4W	A
R415	1-249-425-11	CARBON 4.7K 5% 1/4W	A
R416	1-249-425-11	CARBON 4.7K 5% 1/4W	A
R417	1-247-849-00	CARBON 5.6K 5% 1/4W	A
R418	1-249-429-11	CARBON 10K 5% 1/4W	A
R420	⚠1-212-950-00	FUSIBLE 4.7 5% 1/2W	A
R421	⚠1-215-858-00	METAL OXIDE 15 5% 1W	A
RV401	1-230-520-11	RES,ADJ,SOLID 1K	B
RV402	1-230-521-11	RES,ADJ,SOLID 2.2K	B

Ref.No.	Part No.	Description					価格
		Motor Drive Board					
581	*A-2020-080-A	MOUNTED PCB,MOTOR DRIVE					S
C501	1-136-161-00	MYLAR	0.047MF	10%	50V		A
C502	1-124-462-00	ELECT	10MF	20%	16V		A
C503	1-124-462-00	ELECT	10MF	20%	16V		A
C504	1-136-164-00	FILM	0.082MF	5%	50V		A
C505	1-136-153-00	MYLAR	0.01MF	10%	50V		A
C506	1-136-155-00	MYLAR	0.015MF	10%	50V		A
C507	1-124-462-00	ELECT	10MF	20%	16V		A
C508	1-124-258-00	ELECT	3.3MF	20%	35V		A
C509	1-124-462-00	ELECT	10MF	20%	16V		A
C510	1-136-157-00	MYLAR	0.022MF	10%	50V		A
CN501	*1-558-064-11	CABLE,CONNECTION (2MM PITCH) 6P					E
CN502	*1-555-130-00	WIRE,PVC					G
D501	8-719-815-55	DIODE 1S1555					A
D502	8-719-815-55	DIODE 1S1555					A
IC501	8-759-602-65	IC CX-065B					E
IC502	8-759-145-58	IC UPC4558C					F
Q501	8-729-606-32	TRANSISTOR 2SC2603-E					A
Q502	8-729-606-32	TRANSISTOR 2SC2603-E					A
Q503	8-729-288-02	TRANSISTOR 2SD880-O					C
Q504	8-729-283-41	TRANSISTOR 2SB834-O					D
Q505	8-729-288-02	TRANSISTOR 2SD880-O					C
Q506	8-729-283-41	TRANSISTOR 2SB834-O					D
R501	1-249-419-11	CARBON	1.5K	5%	1/4W		A
R502	1-249-429-11	CARBON	10K	5%	1/4W		A
R503	1-249-437-11	CARBON	47K	5%	1/4W		A
R504	1-249-441-11	CARBON	100K	5%	1/4W		A
R505	1-249-438-11	CARBON	56K	5%	1/4W		A
R506	1-247-881-00	CARBON	120K	5%	1/4W		A
R507	⚠1-206-644-00	METAL OXIDE	150	5%	2W	F	B
R508	1-249-409-11	CARBON	220	5%	1/4W		A
R509	1-249-417-11	CARBON	1K	5%	1/4W		A
R510	1-249-402-11	CARBON	56	5%	1/4W		A
R511	1-249-402-11	CARBON	56	5%	1/4W		A
R512	1-249-417-11	CARBON	1K	5%	1/4W		A
R513	1-247-883-00	CARBON	150K	5%	1/4W		A
R514	1-215-493-00	CARBON	1M	5%	1/4W		A
R515	1-247-883-00	CARBON	150K	5%	1/4W		A
R516	1-249-425-11	CARBON	4.7K	5%	1/4W		A
R517	1-249-425-11	CARBON	4.7K	5%	1/4W		A
R518	1-215-493-00	CARBON	1M	5%	1/4W		A
R519	1-249-425-11	CARBON	4.7K	5%	1/4W		A
R520	1-249-425-11	CARBON	4.7K	5%	1/4W		A
R521	1-247-883-00	CARBON	150K	5%	1/4W		A
R522	1-247-883-00	CARBON	150K	5%	1/4W		A
R523	1-249-405-11	CARBON	100	5%	1/4W		A
R524	1-249-405-11	CARBON	100	5%	1/4W		A
R525	⚠1-217-377-11	FUSIBLE	1.5	5%	1/4W	F	B
R526	⚠1-217-377-11	FUSIBLE	1.5	5%	1/4W	F	B
R527	1-249-432-11	CARBON	18K	5%	1/4W		A
R528	1-249-428-11	CARBON	8.2K	5%	1/4W		A
R529	1-249-429-11	CARBON	10K	5%	1/4W		A
R530	1-249-409-11	CARBON	220	5%	1/4W		A
R531	1-249-433-11	CARBON	22K	5%	1/4W		A
R532	1-249-434-11	CARBON	27K	5%	1/4W		A

Ref.No.	Part No.	Description					価格
RV501	1-226-773-11	RES,ADJ,METAL GLAZE	22K				B
RV502	1-230-893-11	RES,ADJ,METAL GLAZE	220				C
RV503	1-228-761-00	RES,ADJ,METAL GLAZE	100K				C
RV504	1-228-761-00	RES,ADJ,METAL GLAZE	100K				C
TH501	1-800-202-XX	THERMISTOR S-10K					D
		Switch Board					
591	*1-616-214-11	PC BOARD,SWITCH					C
CN602	*1-558-069-11	LEAD (WITH DIP CONNECTOR)					D
CNP601	*1-560-465-00	PIN CONNECTOR 12P					B
D601	8-719-911-06	DIODE 1SS106					A
D602	8-719-311-21	DIODE SEL1121R					A
D603	8-719-311-21	DIODE SEL1121R					A
R601	1-249-413-11	CARBON	470	5%	1/4W		A
S601	1-570-113-11	SWITCH,KEY BOARD					C
S602	1-570-113-11	SWITCH,KEY BOARD					C
S603	1-570-113-11	SWITCH,KEY BOARD					C
S604	1-570-113-11	SWITCH,KEY BOARD					C
S605	1-554-481-00	SWITCH,SLIDE					C
S606	1-554-481-00	SWITCH,SLIDE					C
		Connector Board					
601	*A-2025-155-A	MOUNTED PCB,CONNECTOR					P
C850	1-123-611-00	ELECT	1MF	20%	50V		A
C851	1-123-611-00	ELECT	1MF	20%	50V		A
C852	1-130-475-00	MYLAR	0.0022MF	10%	50V		A
C853	1-107-042-00	MICA	2.2PF	0.5PF	500V		A
C860	1-123-611-00	ELECT	1MF	20%	50V		A
C861	1-123-611-00	ELECT	1MF	20%	50V		A
C862	1-130-475-00	MYLAR	0.0022MF	10%	50V		A
C863	1-107-042-00	MICA	2.2PF	0.5PF	500V		A
C870	1-123-611-00	ELECT	1MF	20%	50V		A
C871	1-123-611-00	ELECT	1MF	20%	50V		A
C872	1-130-475-00	MYLAR	0.0022MF	10%	50V		A
C873	1-107-042-00	MICA	2.2PF	0.5PF	500V		A
C880	1-123-611-00	ELECT	1MF	20%	50V		A
C881	1-123-611-00	ELECT	1MF	20%	50V		A
C882	1-130-475-00	MYLAR	0.0022MF	10%	50V		A
C883	1-107-042-00	MICA	2.2PF	0.5PF	500V		A
C890	1-124-236-00	ELECT	47MF	20%	16V		A
C891	1-124-236-00	ELECT	47MF	20%	16V		A
CN850	*1-558-314-11	CABLE,CONNECTION (2MM PITCH) 3P					D
CN851	*1-558-311-11	CABLE,CONNECTION					K
CN852	*1-558-066-21	CABLE,CONNECTION (2MM PITCH) 10P					G
CN853	*1-558-310-11	CABLE,CONNECTION					J
CN856	*1-558-309-11	CABLE,CONNECTION					F
CNJ854	1-562-090-00	JACK 13P					F
CNJ855	1-562-090-00	JACK 13P					F
CP890	1-232-990-11	COMPOSITION CIRCUIT BLOCK					B

Ref.No.	Part No.	Description				価格
IC890	8-759-900-05	IC SN74LS05N				F
IC891	8-759-100-06	IC UPC4556C				E
IC892	8-759-100-06	IC UPC4556C				E
Q891	8-729-195-23	TRANSISTOR 2SA952				C
Q892	8-729-195-23	TRANSISTOR 2SA952				C
Q893	8-729-195-23	TRANSISTOR 2SA952				C
Q894	8-729-195-23	TRANSISTOR 2SA952				C
Q895	8-729-195-23	TRANSISTOR 2SA952				C
R850	1-249-438-11	CARBON	56K	5%	1/4W	A
R851	1-249-429-11	CARBON	10K	5%	1/4W	A
R852	1-249-429-11	CARBON	10K	5%	1/4W	A
R853	1-249-441-11	CARBON	100K	5%	1/4W	A
R854	1-249-397-11	CARBON	22	5%	1/4W	A
R855	1-249-434-11	CARBON	27K	5%	1/4W	A
R856	1-249-429-11	CARBON	10K	5%	1/4W	A
R860	1-249-438-11	CARBON	56K	5%	1/4W	A
R861	1-249-429-11	CARBON	10K	5%	1/4W	A
R862	1-249-429-11	CARBON	10K	5%	1/4W	A
R863	1-249-441-11	CARBON	100K	5%	1/4W	A
R864	1-249-397-11	CARBON	22	5%	1/4W	A
R865	1-249-434-11	CARBON	27K	5%	1/4W	A
R866	1-249-429-11	CARBON	10K	5%	1/4W	A
R870	1-249-438-11	CARBON	56K	5%	1/4W	A
R871	1-249-429-11	CARBON	10K	5%	1/4W	A
R872	1-249-429-11	CARBON	10K	5%	1/4W	A
R873	1-249-441-11	CARBON	100K	5%	1/4W	A
R874	1-249-397-11	CARBON	22	5%	1/4W	A
R875	1-249-434-11	CARBON	27K	5%	1/4W	A
R876	1-249-429-11	CARBON	10K	5%	1/4W	A
R880	1-249-438-11	CARBON	56K	5%	1/4W	A
R881	1-249-429-11	CARBON	10K	5%	1/4W	A
R882	1-249-429-11	CARBON	10K	5%	1/4W	A
R883	1-249-441-11	CARBON	100K	5%	1/4W	A
R884	1-249-397-11	CARBON	22	5%	1/4W	A
R885	1-249-434-11	CARBON	27K	5%	1/4W	A
R886	1-249-429-11	CARBON	10K	5%	1/4W	A
R890	1-249-420-11	CARBON	1.8K	5%	1/4W	A
R891	1-249-420-11	CARBON	1.8K	5%	1/4W	A
R892	1-249-420-11	CARBON	1.8K	5%	1/4W	A
R893	1-249-420-11	CARBON	1.8K	5%	1/4W	A
R894	1-249-420-11	CARBON	1.8K	5%	1/4W	A
R895	1-249-425-11	CARBON	4.7K	5%	1/4W	A
R896	1-249-425-11	CARBON	4.7K	5%	1/4W	A
R897	1-249-425-11	CARBON	4.7K	5%	1/4W	A
R898	1-249-425-11	CARBON	4.7K	5%	1/4W	A
R899	1-249-425-11	CARBON	4.7K	5%	1/4W	A
S890	1-516-171-00	SLIDE SWITCH				E

Ref.No.	Part No.	Description				価格
		Volume Board				
681	*1-617-607-11	PC BOARD, VOLUME				E
C703	1-124-236-00	ELECT	47MF	20%	16V	A
C711	1-130-487-00	MYLAR	0.022MF	5%	50V	A
C721	1-130-487-00	MYLAR	0.022MF	5%	50V	A
C731	1-124-259-00	ELECT	4.7MF	20%	50V	A
C741	1-124-259-00	ELECT	4.7MF	20%	50V	A
CN704	*1-558-312-11	CABLE, CONNECTION				J
CNP701	*1-560-464-00	PIN, CONNECTOR	10P			B
CNP702	*1-560-467-00	PIN, CONNECTOR	4P			A
CNP703	*1-560-467-00	PIN, CONNECTOR	4P			A
CP701	1-409-436-11	COIL, TRAP				E
CP702	1-409-436-11	COIL, TRAP				E
CP703	1-409-436-11	COIL, TRAP				E
CP704	1-409-436-11	COIL, TRAP				E
Q701	8-729-889-40	TRANSISTOR 2SD894				C
R701	1-249-438-11	CARBON	56K	5%	1/4W	A
R710	1-249-423-11	CARBON	3.3K	5%	1/4W	A
R719	1-249-427-11	CARBON	6.8K	5%	1/4W	A
R720	1-249-423-11	CARBON	3.3K	5%	1/4W	A
R729	1-249-427-11	CARBON	6.8K	5%	1/4W	A
R730	1-249-423-11	CARBON	3.3K	5%	1/4W	A
R739	1-249-427-11	CARBON	6.8K	5%	1/4W	A
R740	1-249-423-11	CARBON	3.3K	5%	1/4W	A
R749	1-249-427-11	CARBON	6.8K	5%	1/4W	A
RV710	1-230-523-11	RES, ADJ, SOLID	10K			B
RV720	1-230-523-11	RES, ADJ, SOLID	10K			B
RV730	1-230-523-11	RES, ADJ, SOLID	10K			B
RV740	1-230-523-11	RES, ADJ, SOLID	10K			B
		Level Meter Board				
691	*1-617-606-11	PC BOARD, METER				G
C701	1-124-236-00	ELECT	47MF	20%	16V	A
C702	1-124-236-00	ELECT	47MF	20%	16V	A
C712	1-123-611-00	ELECT	1MF	20%	50V	A
C713	1-124-259-00	ELECT	4.7MF	20%	50V	A
C714	1-101-880-00	CERAMIC	47PF	5%	50V	A
C722	1-123-611-00	ELECT	1MF	20%	50V	A
C723	1-124-259-00	ELECT	4.7MF	20%	50V	A
C724	1-101-880-00	CERAMIC	47PF	5%	50V	A
C732	1-123-611-00	ELECT	1MF	20%	50V	A
C733	1-124-259-00	ELECT	4.7MF	20%	50V	A

Ref.No.	Part No.	Description				価格
C734	1-101-880-00	CERAMIC	47PF	5%	50V	A
C742	1-123-611-00	ELECT	1MF	20%	50V	A
C743	1-124-259-00	ELECT	4.7MF	20%	50V	A
C744	1-101-880-00	CERAMIC	47PF	5%	50V	A
CN712	*1-558-067-21	CABLE, CONNECTION (2MM PITCH) 4P				D
CN713	*1-558-067-21	CABLE, CONNECTION (2MM PITCH) 4P				D
CNP705	*1-560-460-00	PIN, CONNECTOR 4P				A
D710	8-719-936-77	DIODE GL112F13				J
D720	8-719-936-77	DIODE GL112F13				J
D730	8-719-936-77	DIODE GL112F13				J
D740	8-719-936-77	DIODE GL112F13				J
IC710	8-759-801-07	IC LB1412				G
IC720	8-759-801-07	IC LB1412				G
IC730	8-759-801-07	IC LB1412				G
IC740	8-759-801-07	IC LB1412				G
R702	1-247-706-11	CARBON	330	5%	1/4W	A
R703	1-247-706-11	CARBON	330	5%	1/4W	A
R704	1-247-706-11	CARBON	330	5%	1/4W	A
R705	1-247-706-11	CARBON	330	5%	1/4W	A
R706	1-247-706-11	CARBON	330	5%	1/4W	A
R707	1-247-706-11	CARBON	330	5%	1/4W	A
R708	1-247-706-11	CARBON	330	5%	1/4W	A
R709	1-247-706-11	CARBON	330	5%	1/4W	A
R711	1-249-433-11	CARBON	22K	5%	1/4W	A
R712	1-249-436-11	CARBON	39K	5%	1/4W	A
R713	1-249-423-11	CARBON	3.3K	5%	1/4W	A
R714	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R715	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R716	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R717	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R718	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R721	1-249-433-11	CARBON	22K	5%	1/4W	A
R722	1-249-436-11	CARBON	39K	5%	1/4W	A
R723	1-249-423-11	CARBON	3.3K	5%	1/4W	A
R724	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R725	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R726	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R727	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R728	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R731	1-249-433-11	CARBON	22K	5%	1/4W	A
R732	1-249-436-11	CARBON	39K	5%	1/4W	A
R733	1-249-423-11	CARBON	3.3K	5%	1/4W	A
R734	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R735	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R736	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R737	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R738	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R741	1-249-433-11	CARBON	22K	5%	1/4W	A
R742	1-249-436-11	CARBON	39K	5%	1/4W	A
R743	1-249-423-11	CARBON	3.3K	5%	1/4W	A
R744	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R745	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R746	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R747	1-249-419-11	CARBON	1.5K	5%	1/4W	A
R748	1-249-419-11	CARBON	1.5K	5%	1/4W	A

Ref.No.	Part No.	Description	価格
		Short LED Board	
611	*1-619-208-11	PC BOARD, LED	A
D902	8-719-311-21	DIODE SEL1121R	A
		Power LED Bord	
621	*1-618-816-11	PC BOARD, LED	A
D901	8-719-313-21	DIODE SEL1321G	B
		Photo Coupler Board	
631	*1-616-207-11	PC BOARD, PHOTO COUPLER	A
PH901	8-719-751-41	DIODE NJL5141E-A	E
		PS-5 Board	
701	*A-2573-061-A	MOUNTED PCB, PS-5	
C1	1-130-710-00	FILM 0.1MF 20% 250V	D
C2	1-161-742-00	CERAMIC 0.0022MF 20% 400V	B
C3	1-161-742-00	CERAMIC 0.0022MF 20% 400V	B
C4	1-161-742-00	CERAMIC 0.0022MF 20% 400V	B
C5	1-161-744-00	CERAMIC 0.01MF 400V	C
C6	1-161-744-00	CERAMIC 0.01MF 400V	C
C7	1-125-318-00	ELECT (BLOCK) 220MF 20% 400V	J
C8	1-127-508-00	ELECT (SOLED) 2.2MF 20% 25V	B
C9	1-136-153-00	MYLAR 0.01MF 10% 50V	A
C10	1-124-478-11	ELECT 100MF 20% 25V	A
C11	1-136-169-00	MYLAR 0.22MF 5% 50V	A
C12	1-106-351-00	MYLAR 0.0022MF 10% 100V	A
C13	1-106-351-00	MYLAR 0.0022MF 10% 100V	A
C14	1-106-351-00	MYLAR 0.0022MF 10% 100V	A
C15	1-106-351-00	MYLAR 0.0022MF 10% 100V	A
C16	1-242-602-00	ELECT 2200MF 20% 35V	F
C17	1-242-602-00	ELECT 2200MF 20% 35V	F
C18	1-124-597-11	ELECT 2200MF 20% 16V	D
C19	1-124-597-11	ELECT 2200MF 20% 16V	D
C20	1-127-513-00	ELECT (SOLID) 15MF 20% 25V	C

Ref.No.	Part No.	Description				価格
C21	1-127-513-00	ELECT (SOLID)	15MF	20%	25V	C
C23	1-124-597-11	ELECT	2200MF	20%	16V	D
C24	1-124-597-11	ELECT	2200MF	20%	16V	D
C26	1-136-169-00	MYLAR	0.22MF	5%	50V	A
C27	1-127-514-00	ELECT (SOLID)	33MF	20%	16V	F
C28	1-127-514-00	ELECT (SOLID)	33MF	20%	16V	F
C29	1-127-514-00	ELECT (SOLID)	33MF	20%	16V	F
C30	1-130-489-00	MYLAR	0.033MF	5%	50V	A
C31	1-102-116-00	CERAMIC	680PF	10%	50V	A
C32	1-106-359-00	MYLAR	0.0047MF	10%	200V	B
C33	1-106-359-00	MYLAR	0.0047MF	10%	200V	B
C34	1-106-359-00	MYLAR	0.0047MF	10%	200V	B
C35	1-102-116-61	CERAMIC	680PF	10%	50V	A
CN1	*⚠1-561-978-00	CONNECTOR,SOCKET 3P				D
CN2	*1-561-977-00	CONNECTOR,SOCKET 2P				D
CN3	*1-508-846-00	PIN,CONNECTOR 8P				D
CN4	*1-508-846-00	PIN,CONNECTOR 8P				D
D1	8-719-300-63	DIODE LB-156				E
D2	8-719-815-55	DIODE 1S1555				A
D3	8-719-815-55	DIODE 1S1555				A
D4	8-719-815-55	DIODE 1S1555				A
D5	8-719-302-21	DIODE EU2Z				B
D6	8-719-302-21	DIODE EU2Z				B
D7	8-719-500-41	DIODE D8LCA20				E
D8	8-719-500-41	DIODE D8LCA20				E
D10	8-719-500-42	DIODE D8LCA20R				E
D11	8-719-931-22	DIODE EQB01-22				D
D12	8-719-114-53	DIODE RD8.2JSB2				A
D13	8-719-100-80	DIODE RD20EB2				A
D14	8-719-931-18	DIODE EQB01-18				D
D15	8-719-931-18	DIODE EQB01-18				D
D16	8-719-931-06	DIODE EQB01-06				D
IC1	8-759-140-85	IC UPC1093J				D
IC2	8-759-924-12	IC LM7805CT				D
L2	1-407-717-00	MICRO INDUCTOR 1MMH				A
L3	1-407-488-00	MICRO INDUCTOR 470UH				B
L4	1-459-106-00	COIL,DUST CORE				E
L5	1-459-110-00	COIL,DUST CORE				D
L6	1-459-110-00	COIL,DUST CORE				D
L7	1-459-106-00	COIL,DUST CORE				E
LF1	1-421-960-11	TRANSFORMER,LINE FILTER				E
PH1	8-719-800-82	DIODE TLP581				J
PS1	1-532-984-11	LINK,IC				B
PS2	1-532-984-11	LINK,IC				B
PS3	1-532-984-11	LINK,IC				B
PS4	1-532-984-11	LINK,IC				B
PS5	1-532-984-11	LINK,IC				B
Q1	8-729-168-82	TRANSISTOR 2SC2688				C
Q2	8-729-245-82	TRANSISTOR 2SC2458-Y*(28)				A
Q3	8-729-000-16	TRANSISTOR MTP6N60				L
R1	⚠1-217-294-00	WIREWOUND	4.7	10%	5W F	B
R2	⚠1-247-711-11	CARBON	680	5%	1/4W	A
R3	1-247-885-00	CARBON	180K	5%	1/4W	A
R4	1-247-885-00	CARBON	180K	5%	1/4W	A
R5	1-249-433-11	CARBON	22K	5%	1/4W	A

Ref.No.	Part No.	Description				価格
R6	1-249-438-11	CARBON	56K	5%	1/4W	A
R7	1-249-437-11	CARBON	47K	5%	1/4W	A
R8	⚠1-215-924-00	METAL OXIDE	15K	5%	3W F	A
R9	⚠1-212-853-00	FUSIBLE	6.8	5%	1/4W F	A
R10	⚠1-215-924-00	METAL OXIDE	15K	5%	3W F	A
R11	⚠1-212-962-00	FUSIBLE	15	5%	1/2W F	A
R12	⚠1-212-873-11	FUSIBLE	47	5%	1/4W F	A
R13	⚠1-212-873-11	FUSIBLE	47	5%	1/4W F	A
R14	⚠1-212-962-00	FUSIBLE	15	5%	1/2W F	A
R15	⚠1-215-866-11	METAL OXIDE	330	5%	1W F	A
R16	⚠1-215-866-11	METAL OXIDE	330	5%	1W F	A
R17	1-249-417-11	CARBON	1K	5%	1/4W	A
R18	1-249-417-11	CARBON	1K	5%	1/4W	A
R19	1-249-429-11	CARBON	10K	5%	1/4W	A
R20	1-249-421-11	CARBON	2.2K	5%	1/4W	A
R21	1-249-429-11	CARBON	10K	5%	1/4W	A
R22	1-249-421-11	CARBON	2.2K	5%	1/4W	A
R23	1-247-895-00	CARBON	470K	5%	1/4W	A
R24	⚠1-212-849-00	FUSIBLE	4.7	5%	1/4W F	A
RV1	1-228-519-00	RES,ADJ,METAL GRAZE 2.2K				D
T1	⚠1-449-119-11	TRANSFORMER,CONVERTER				M
T2	1-424-039-11	TRANSFORMER,CURRENT				D

PS-6 Board

702	*1-624-918-11	PC BOARD,PS-6				A
C51	1-130-473-00	MYLAR	0.0015MF	5%	50V	A
C52	1-127-508-00	ELECT(SOLID)	2.2MF	20%	25V	B
C53	1-130-475-00	MYLAR	0.0022MF	5%	50V	A
C54	1-127-510-00	ELECT(SOLID)	4.7MF	20%	25V	B
IC51	8-759-140-84	IC UPC1094C				C
R51	1-249-435-11	CARBON	33K	5%	1/4W	A
R52	1-249-433-11	CARBON	22K	5%	1/4W	A
R53	1-249-417-11	CARBON	1K	5%	1/4W	A
R54	1-249-437-11	CARBON	47K	5%	1/4W	A
R55	1-249-434-11	CARBON	27K	5%	1/4W	A
R56	⚠1-212-865-00	FUSIBLE	22	5%	1/4W F	A
RV51	1-226-772-11	RES,ADJ,METAL GLAZE 4.7K				C
W51	*1-564-163-00	PIN,CONNECTOR 6P				C

PS-7 Board

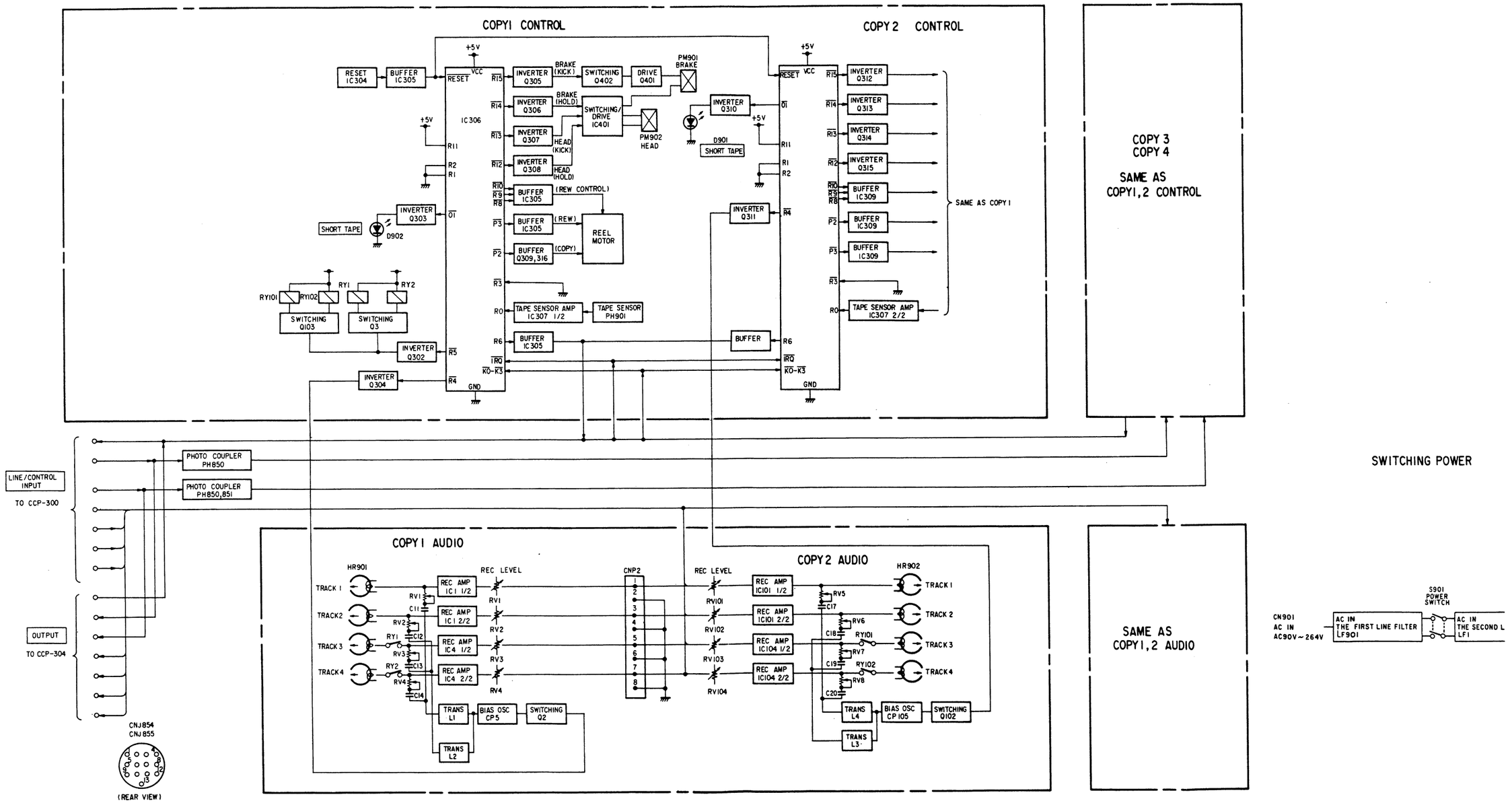
C901	⚠1-130-710-00	FILM	0.1MF	20%	250V	B
LF901	⚠1-421-225-00	COIL,LINE FILTER				E

Stator Board

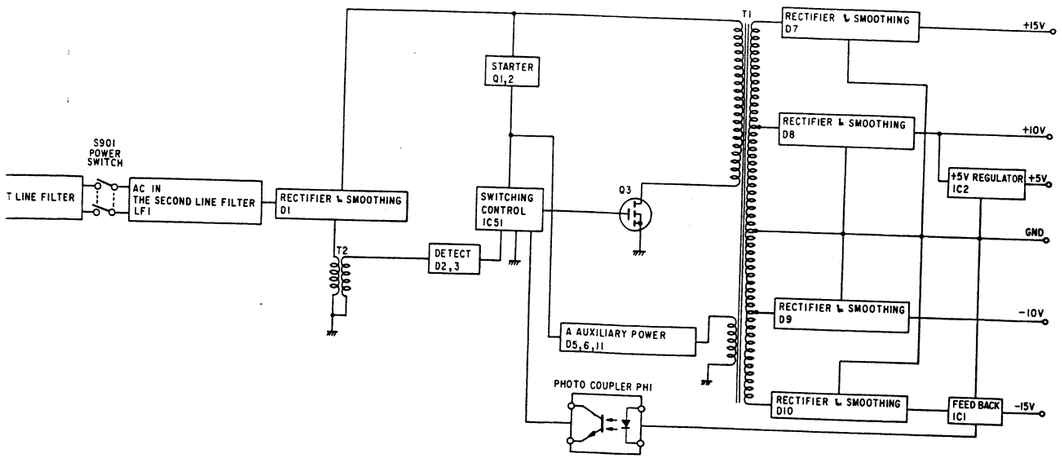
H701	8-719-800-17	DIODE THS102A				C
H702	8-719-800-17	DIODE THS102A				C

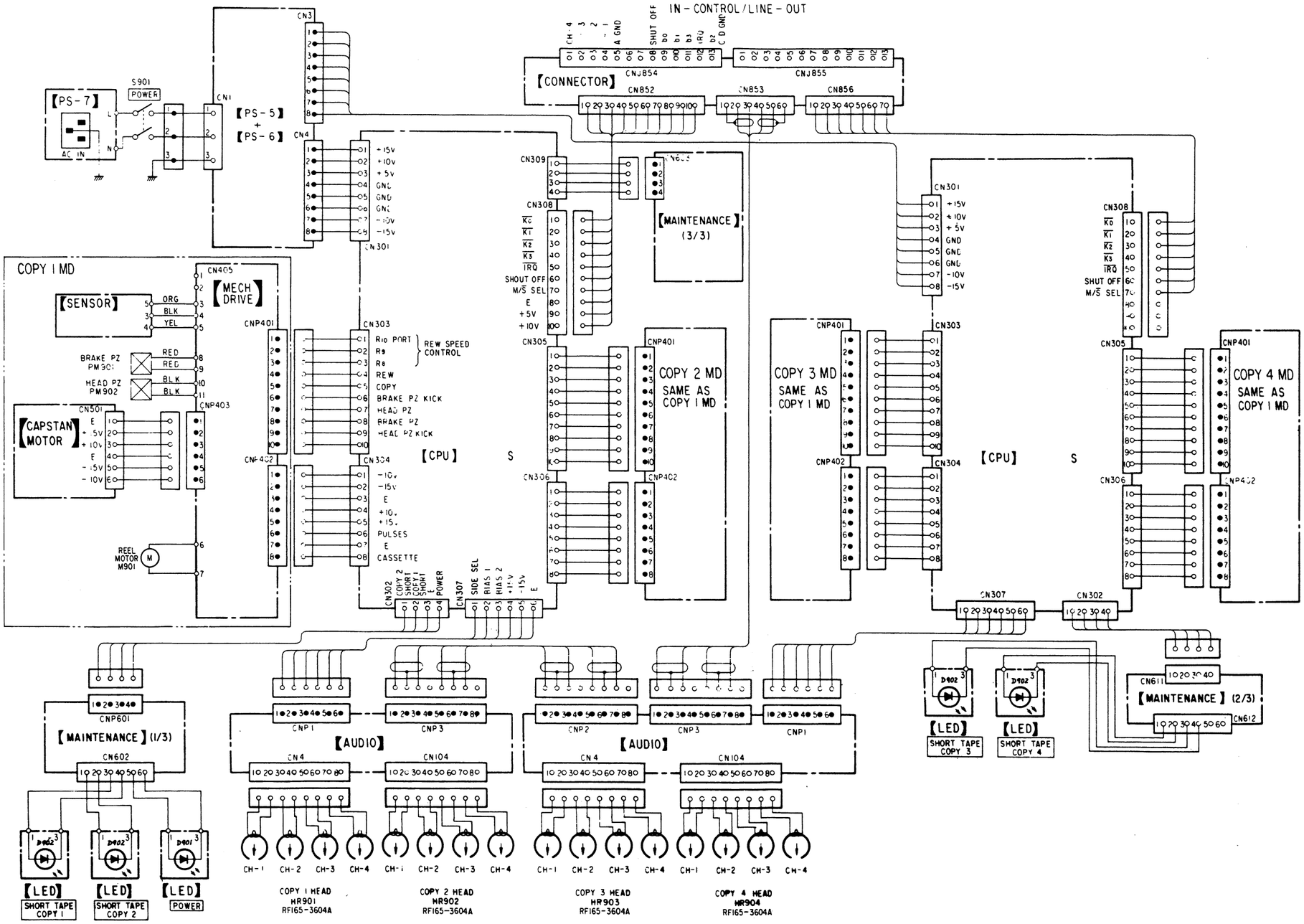
SECTION 8
CCP-314 DIAGRAMS AND PARTS LIST

8-1. BLOCK DIAGRAM



SWITCHING POWER

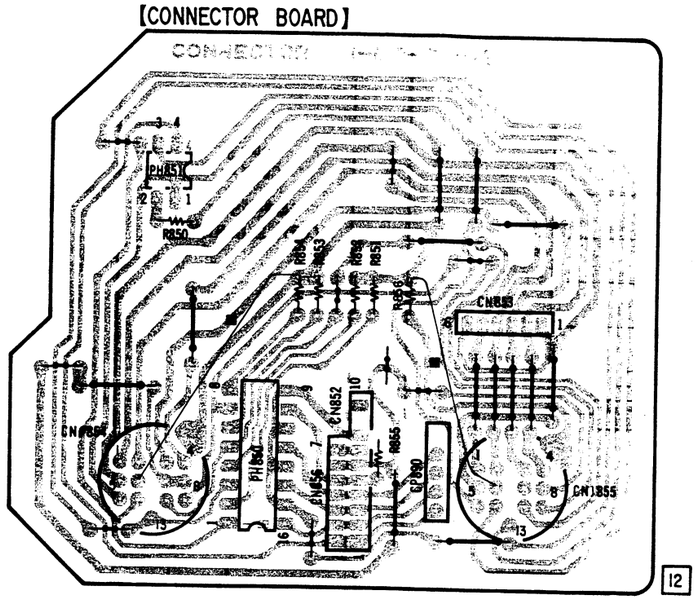


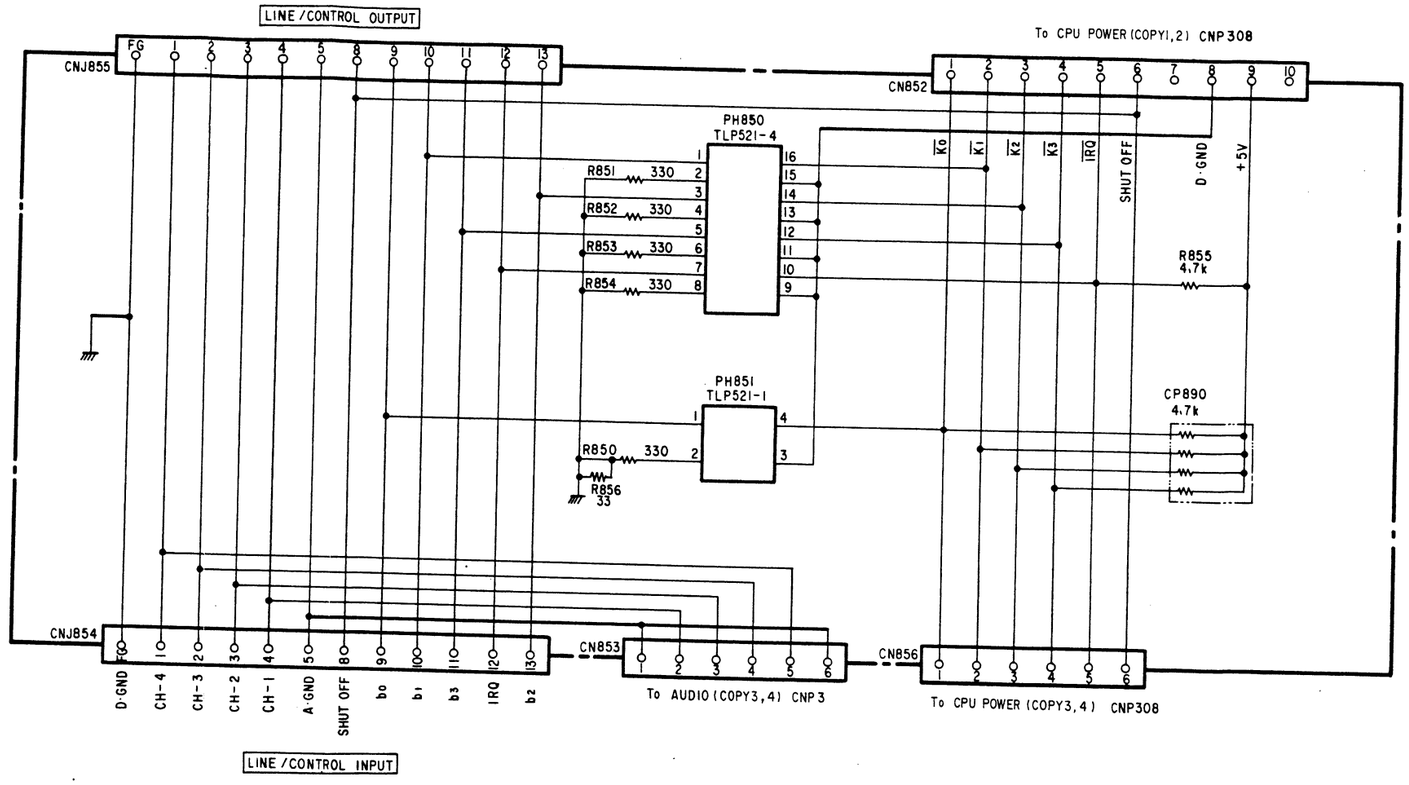

IN - CONTROL / LINE - OUT
【CONNECTOR】
CNJ854
CNJ855
CN852
CN853
CN856
【PS-7】
AC IN
S901
POWER
CN1
【PS-5】
+
【PS-6】
CN3
CN4
CN301
COPY 1 MD
【SENSOR】
ORG
BLK
YEL
BRAKE PZ PM901
HEAD PZ PM902
RED
BLK
CN405
【MECH DRIVE】
CNP401
CNP402
CNP403
CN303
CN304
REW SPEED CONTROL
REW
COPY
BRAKE PZ KICK
HEAD PZ
BRAKE PZ
HEAD PZ KICK
CN501
【CAPSTAN MOTOR】
REEL MOTOR M901
【CPU】
CN309
CN308
【MAINTENANCE】 (3/3)
CN305
CN306
CN307
CN302
CN301
CNP401
CNP402
COPY 2 MD
SAME AS
COPY 1 MD
COPY 3 MD
SAME AS
COPY 1 MD
COPY 4 MD
SAME AS
COPY 1 MD
【MAINTENANCE】 (1/3)
CNP601
CN602
【MAINTENANCE】 (2/3)
CN611
CN612
【AUDIO】
CNP1
CNP2
CNP3
CN4
CN104
【LED】
SHORT TAPE COPY 1
SHORT TAPE COPY 2
POWER
SHORT TAPE COPY 3
SHORT TAPE COPY 4
CH-1
CH-2
CH-3
CH-4
COPY 1 HEAD HR901 RF165-3604A
COPY 2 HEAD HR902 RF165-3604A
COPY 3 HEAD HR903 RF165-3604A
COPY 4 HEAD HR904 RF165-3604A

Note

8-5. DIGITAL CONNECTOR BOARD — *Soldering Side* —

【CONNECTOR BOARD】

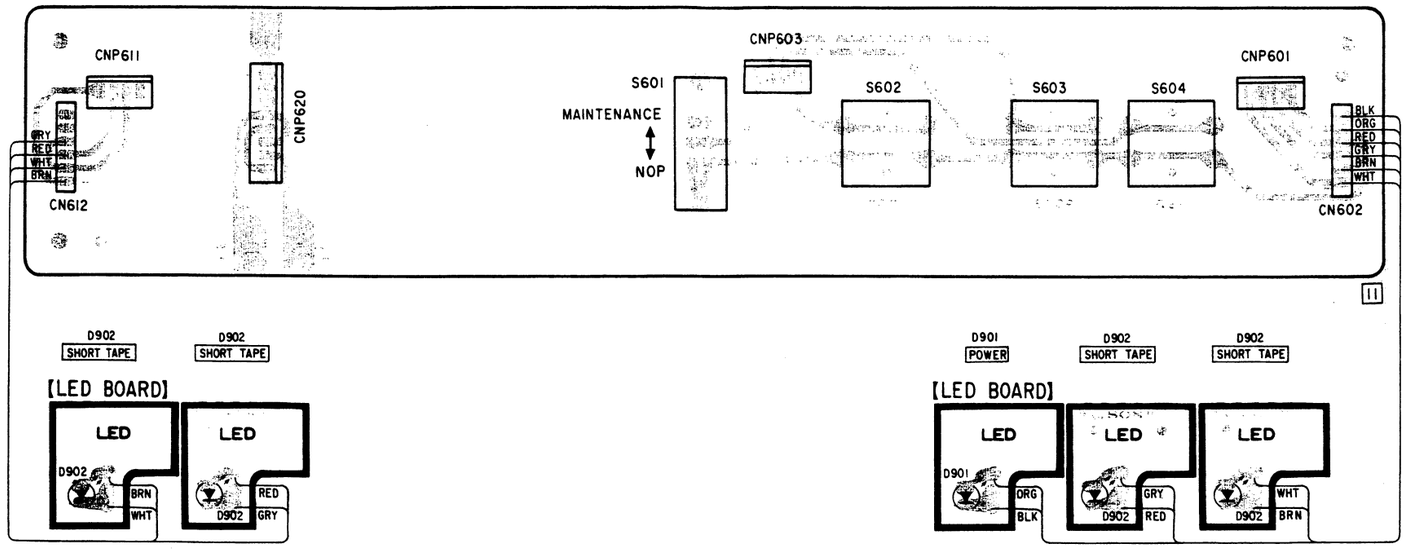


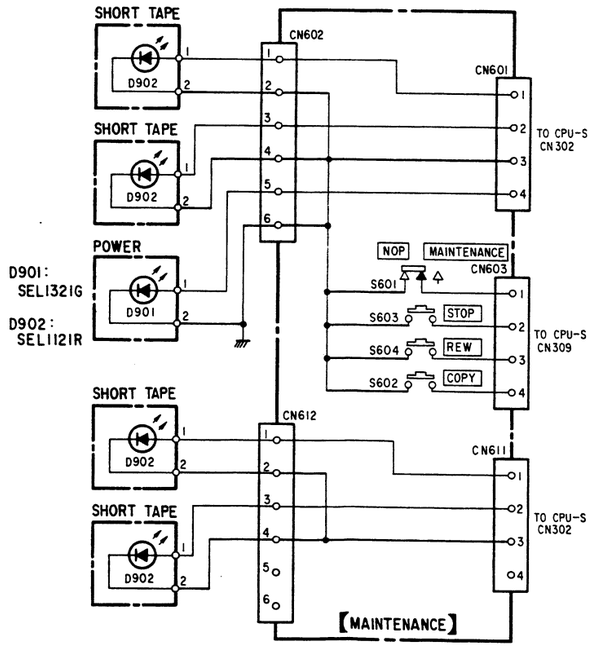


Note:
- ▒▒: B+ pattern.
- ■ : part mounted on the soldering side.

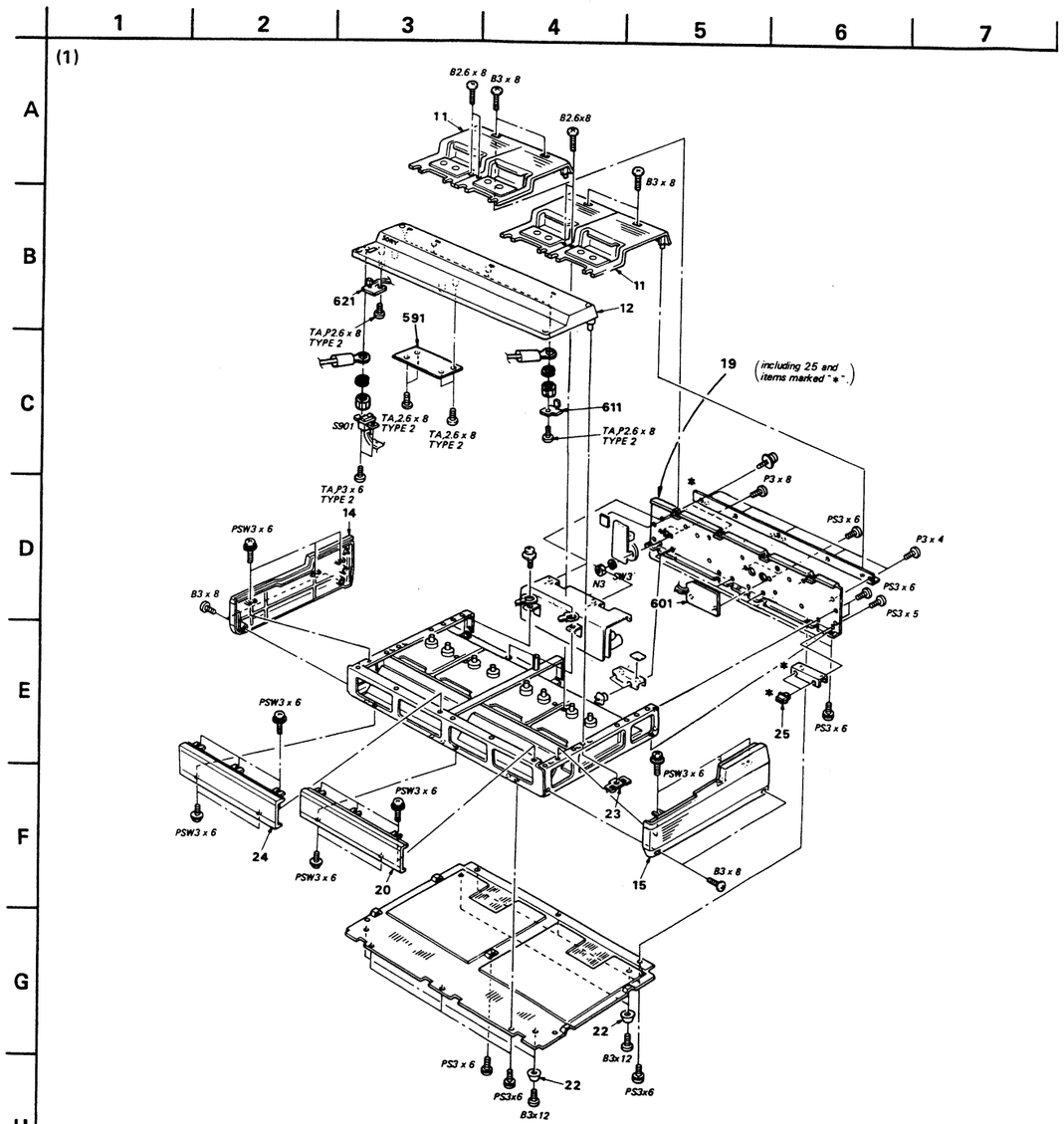
Note:
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/10 W or less unless otherwise specified.
- ▭ : panel designation.
- ▬ : B+ bus.

8-6. MAINTENANCE BOARD — *Soldering Side* —

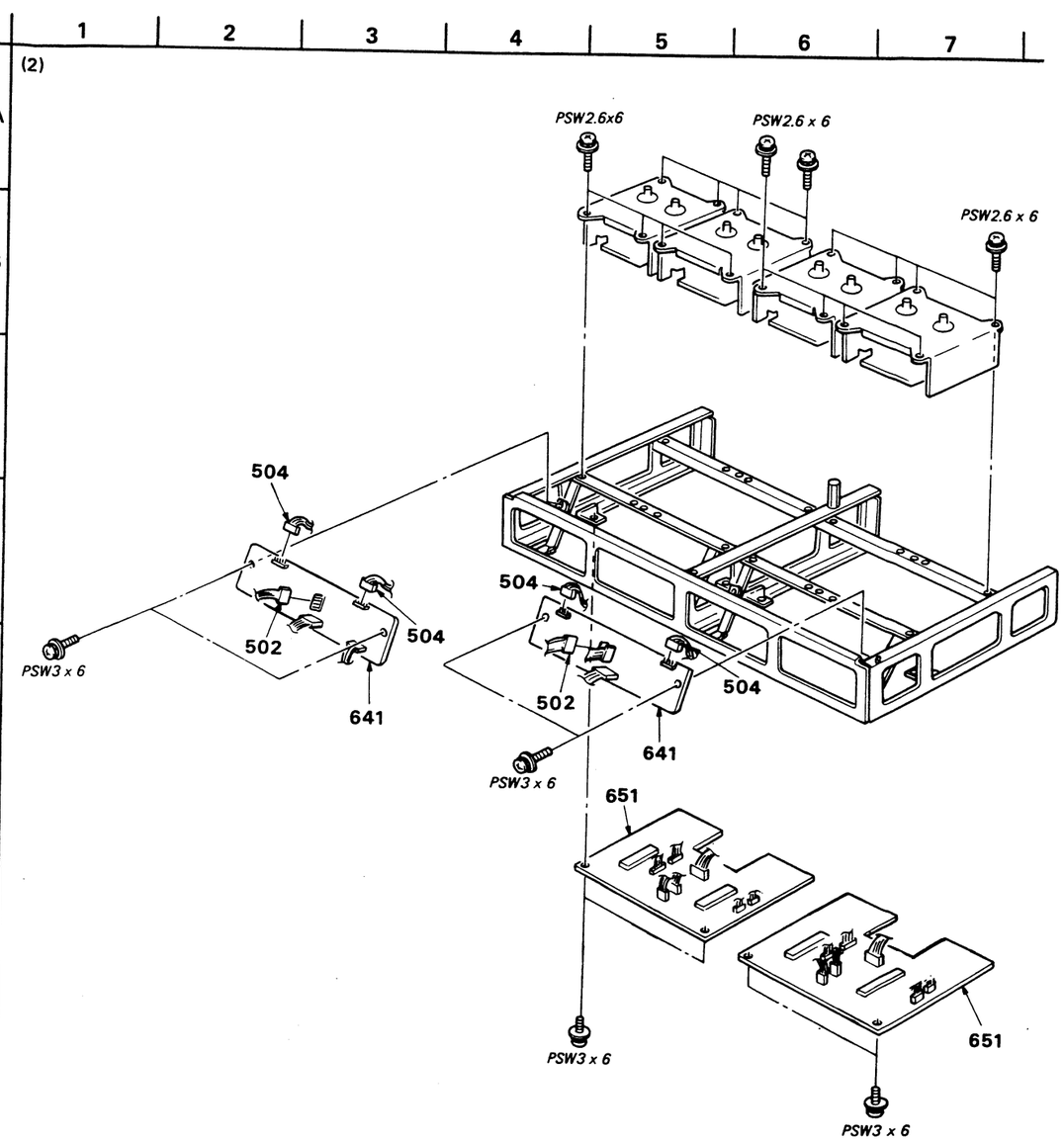




8-10. PARTS LIST

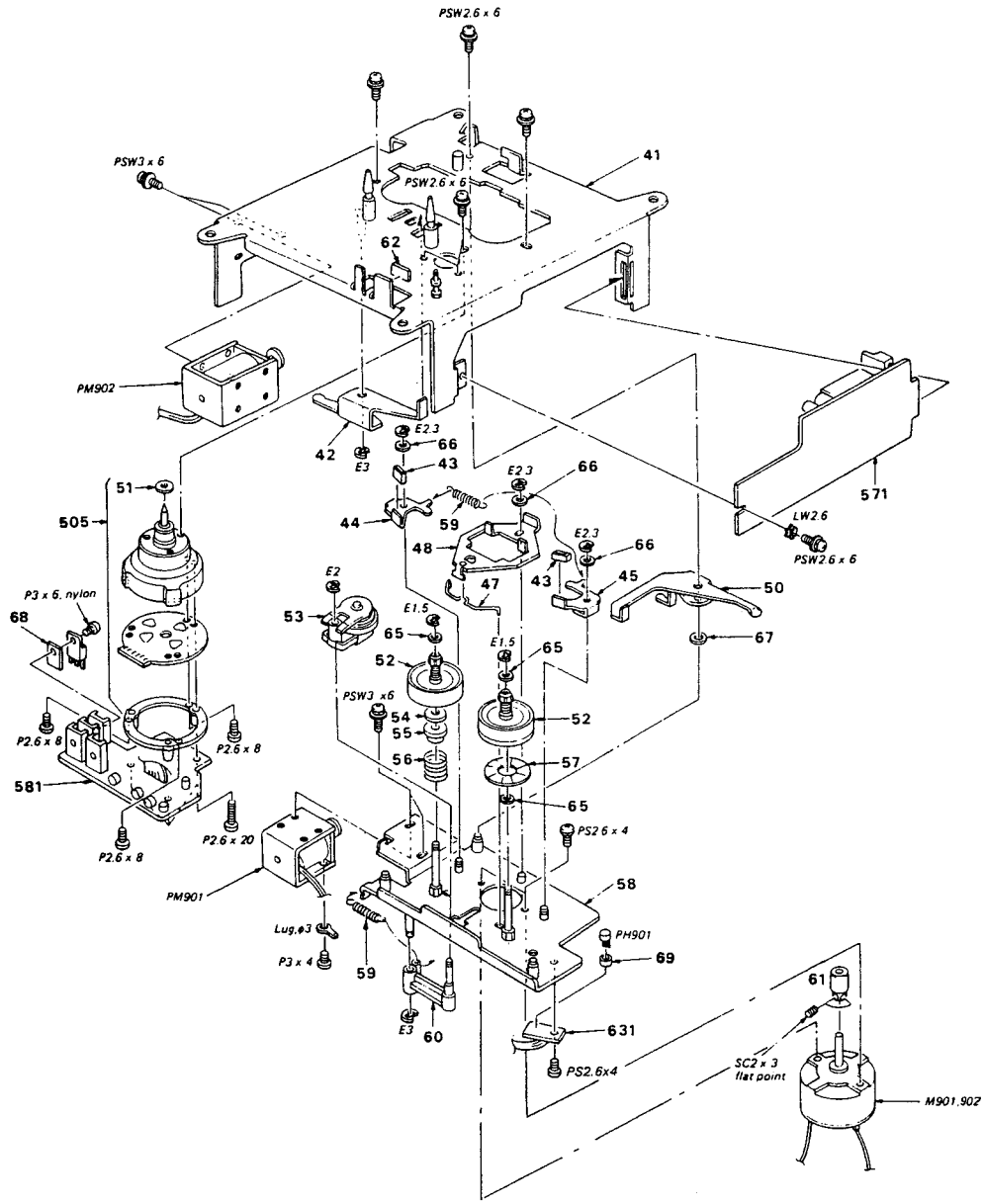


Ref.No.	Part No.	Description	価格
11	*X-3162-308-2	PLATE(REAR) ASSY,TOP	L
12	*X-3162-330-1	PLATE(FRONT) ASSY,TOP	R
14	*3-162-383-01	PLATE(LEFT),SIDE	G
15	*3-162-382-01	PLATE(RIGHT),SIDE	G
19	*A-2563-146-A	REAR PANEL,ASSY	
20	*3-162-380-61	PLATE,FRONT	G
22	X-4809-908-9	FOOT,RUBBER	A
23	*3-162-324-01	NUT,PLATE	A
24	*3-162-380-81	PLATE,FRONT	H
25	*3-642-310-00	HOLDER,CIRCUIT BOARD	A



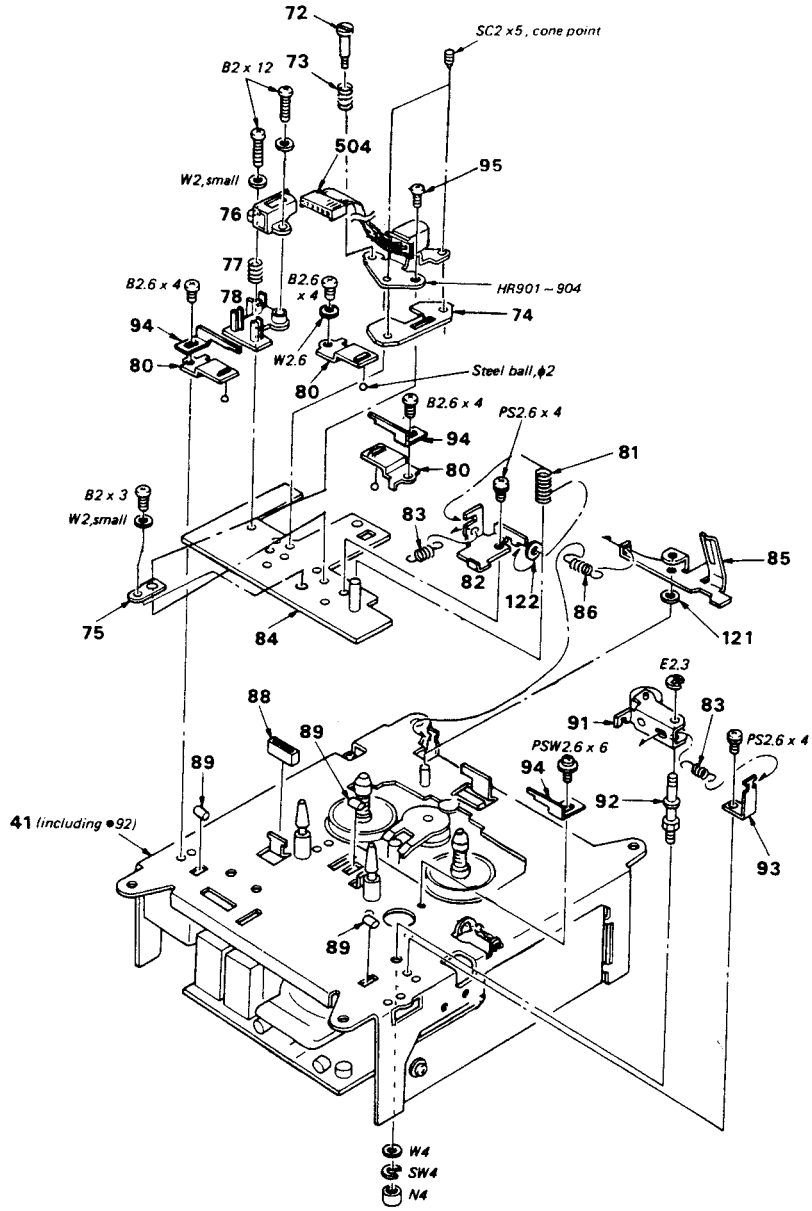
Ref.No.	Part No.	Description	価格
30	*4-906-052-01	SUPPORT(B)	B

(3)



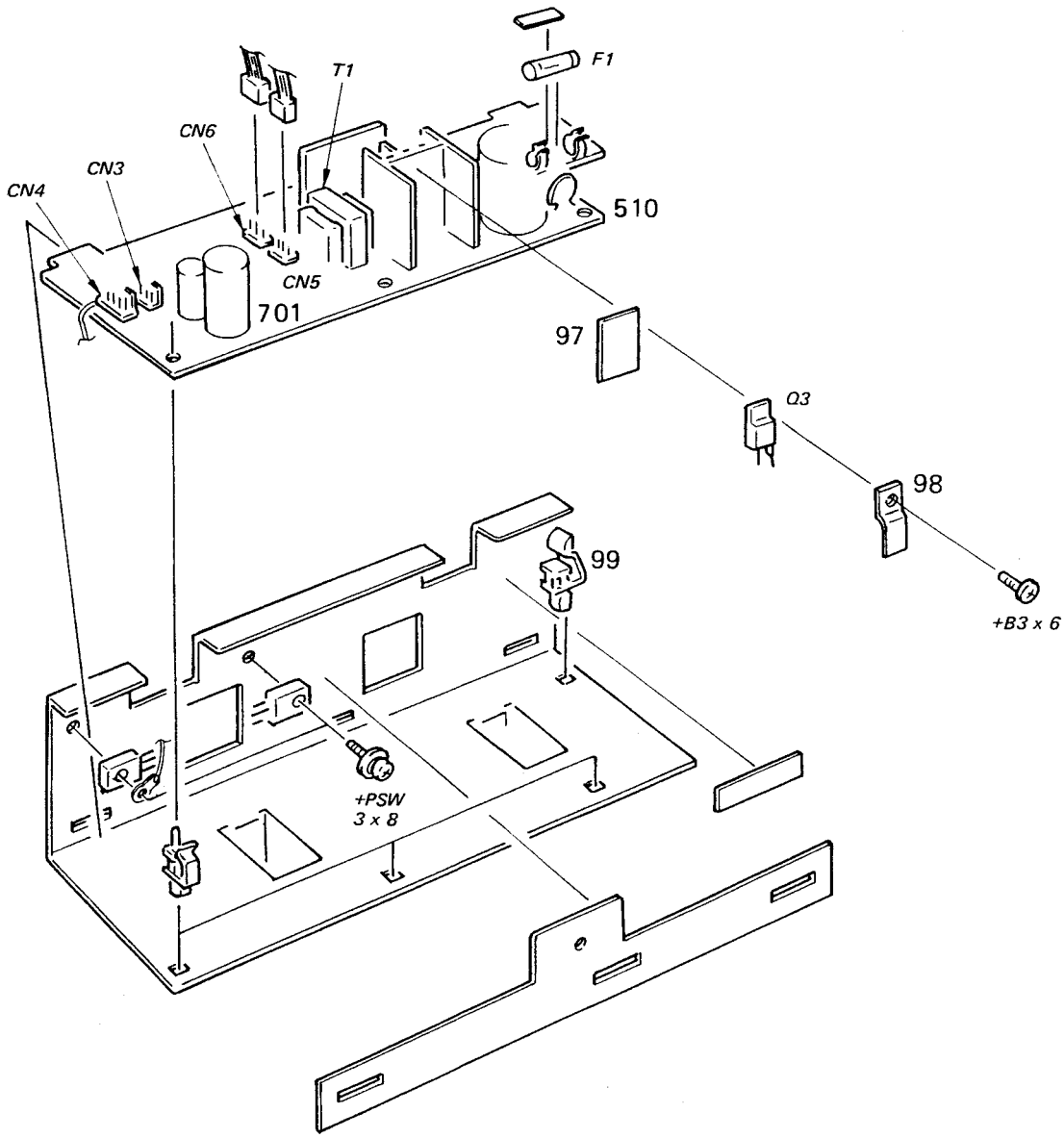
Ref.No.	Part No.	Description	価格	Ref.No.	Part No.	Description	価格
41	*X-3162-313-1	CHASSIS ASSY, MECHANICAL	L	56	3-152-738-00	SPRING, COMPRESSION	A
42	*3-162-313-01	LEVER, FWD	A	57	3-155-352-00	REFLECTOR	A
43	3-162-366-01	RUBBER, BRAKE	F	58	*X-3162-303-3	CHASSIS ASSY, REEL	K
44	*3-162-351-01	LEVER (LEFT), BRAKE	B	59	3-489-123-00	SPRING, TENSION	A
45	*3-162-354-01	LEVER (RIGHT), BRAKE	B	60	*X-3162-304-1	ARM (1) ASSY, IDLER	D
47	3-162-364-02	SPRING	B	61	3-162-357-01	PULLEY, MOTOR	G
48	*X-3162-307-3	PLATE ASSY, RELEASE, BRAKE	C	62	9-911-848-XX	CUSHION (S)	H
50	*3-162-319-01	LEVER, BRAKE	B	65	3-701-437-21	WASHER	A
51	3-162-415-01	WASHER, THRUST	A	66	3-701-439-21	WASHER	A
52	X-3162-317-1	TABLE ASSY, REEL	G	67	3-701-444-21	WASHER, 6	A
53	A-2191-025-A	PULLEY COMPETE ASSY, IDLER	N	68	*3-577-157-20	INSULATOR, TO-126	A
54	3-162-310-01	FELT, CLUTCH	A	69	*3-162-367-01	SPACER	B
55	3-162-356-01	RING, B.T	C				

(4)



Ref.No.	Part No.	Description	価格	Ref.No.	Part No.	Description	価格
41	*X-3162-313-1	CHASSIS ASSY, MECHANICAL	L	84	*X-3162-329-1	CHASSIS(M) ASSY, HEAD	F
72	3-491-136-00	SCREW, HEAD ADJUSTING	A	85	*3-162-337-01	LEVER, CASSETTE RETAINER	C
73	3-162-395-01	SPRING, COMPRESSION	B	86	3-530-249-XX	SPRING, TENSION	A
74	3-162-422-01	SPACER(1)	A	88	*3-483-026-41	RETAINER, THRUST, MOTOR	A
75	*3-162-486-01	PLATE, LOCK, SCREW	A	89	3-558-448-00	ROLLER, HEAD CHASSIS	A
76	8-825-724-00	HEAD, ERASE EF-201-36(GUIDE, TAPE)	H	91	X-3162-306-1	PINCH ROLLER ASSY	F
77	3-481-272-00	SPRING, COMPRESSION	A	92	*3-162-390-01	SHAFT, PINCH ROLLER	E
78	*3-162-376-01	BRACKER, TAPE GUIDE	B	93	*3-162-344-01	BLACVKET, L	A
80	*3-162-312-01	SPRING	A	94	*3-162-426-01	RETAINER, BASE	A
81	3-162-399-01	SPRING	B	95	7-621-770-67	SCREW(M2.6x6), (+)SPECIAL HEAD	A
82	*3-162-345-02	HOOK, SPRING	A	121	3-701-441-21	WASHER	A
83	3-446-154-XX	SPRING, TENSION	A	122	3-701-439-21	WASHER	A

(5)



Ref.No.	Part No.	Descreption	価格
97	2-291-518-00	INSULATOR(E)	A
98	*2-434-297-01	BRACKET	A
99	*4-321-929-00	HORDER,PC BOARDER	A

Ref.No.	Part.No.	Descreption	個数	価格
		Accessories		
	X-3701-105-0	HEAD CLEANING TIP	1	A
	⚠1-534-754-00	POWER CORD(J ONLY)	1	G
	⚠1-551-812-11	POWER CORD(US ONLY)	1	
	⚠1-556-760-11	POWER CORD(3 CORE) (AEP,UK ONLY)	1	
	1-558-196-11	CORD,CONNECTION 13P	1	N
	*3-162-452-01	COVER,DUST	1	H
	3-769-745-01	MANUAL,INSTRUCTION(J ONLY)	1	E
	3-769-745-11	MANUAL,INSTRUCTION(US,UK,AEP ONLY)	1	
	3-769-745-41	MANUAL,INSTRUCTION(AEP ONLY)	1	
		CARD,WARRANTY(S-S4)(B05)(J ONLY)	1	
		LEAFLET(J ONLY)	1	
		Electrical Parts		
502	*1-558-305-11	CABLE,CONNECTION		J
504	*1-558-071-11	LEAD(WITH CONNECTOR)8P		E
505	1-541-316-11	MOTOR,CAPSTAN		S
510	*1-533-189-11	HOLDER,FUSE		A
CN901	⚠1-560-222-11	INLET 3P		F
F1	⚠1-532-822-11	FUSE (J,US ONLY)		C
	⚠1-532-078-11	TIME LAG FUSE (AEP,EK ONLY)		
HR901	8-825-649-11	HEAD RF165-3604A		VE
HR902	8-825-649-11	HEAD RF165-3604A		VE
HR903	8-825-649-11	HEAD RF165-3604A		VE
HR904	8-825-649-11	HEAD RF165-3604A		VE
PM901	1-454-405-11	SOLENOID,PLUNGER		J
PM902	1-454-404-11	SOLENOID,PLUNGER		J
M901	1-541-163-00	MOTOR		J
M902	1-541-163-00	MOTOR		J
S901	⚠1-570-494-11	SWITCH,SEESAW(AC POWER)		F
		PC BOARD,CONNECTOR		
	*1-617-611-11	PC BOARD,CONNECTOR		C
CN852	*1-558-066-21	CABLE,CONNECTION(2MM PITCH) 10P		G
CN853	*1-558-310-11	CABLE,CONNECTION		J
CN856	*1-558-599-11	CABLE,CONNECTION		F
CNJ854	1-562-090-00	JACK 13P		F
CNJ855	1-562-090-00	JACK 13P		F
PH850	8-719-801-19	DIODE TLP521-4		J
PH851	8-719-800-42	TLP521-1-A		D
R850	1-249-411-11	CARBON 330 5% 1/4W		A
R851	1-249-411-11	CARBON 330 5% 1/4W		A
R852	1-249-411-11	CARBON 330 5% 1/4W		A
R853	1-249-411-11	CARBON 330 5% 1/4W		A
R854	1-249-411-11	CARBON 330 5% 1/4W		A
R855	1-249-425-11	CARBON 4.7K 5% 1/4W		A
R856	1-249-399-11	CARBON 33 5% 1/4W		A
		Maintenance Board		
	*1-619-261-11	PC BOARD,MAINTENANCE		F
CNP601	*1-560-467-00	PIN,CONNECTOR 4P		A
CNP603	*1-560-467-00	PIN,CONNECTOR 4P		A
CNP611	*1-560-467-00	PIN,CONNECTOR 4P		A
CNP620	*1-560-470-00	PIN,CONNECTOR 8P		A
S601	1-554-481-00	SWITCH,SLIDE		C
S602	1-570-113-11	SWITCH,KEY BOARD		C
S603	1-570-113-11	SWITCH,KEY BOARD		C
S604	1-570-113-11	SWITCH,KEY BOARD		C

Audio Board (S) (Same as CCP-310)

Bias 1 Board (Same as CCP-310)

Bias 2 Board (Same as CCP-310)

CPU Board (S) (Same as CCP-310)

Mech Drive Board (Same as CCP-310)

Motor Drive Board (Same as CCP-310)

Stator Board (Same as CCP-310)

Short LED Board (Same as CCP-310)

Power LED Board (Same as CCP-310)

Photo Coupler Board (Same as CCP-310)

PS-5 Board (Same as CCP-310)

PS-6 Board (Same as CCP-310)

PS-7 Board (Same as CCP-310)

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88

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